

Faculty of Health Sciences

Department of Medical Biology

# Evolutionary genomics of cowpox virus and recombination *in vitro* between a naturally occurring cowpox virus and a vaccinia virus vectored influenza vaccine

Diana Karina Diaz Cánova A dissertation for the degree of Philosophiae Doctor (PhD)

April 2023



A dissertation for the degree of Philosophiae Doctor

# Evolutionary genomics of cowpox virus and recombination *in vitro* between a naturally occurring cowpox virus and a vaccinia virus vectored influenza vaccine

Diana Karina Diaz Cánova



Molecular Inflammation Research Group Department of Medical Biology Faculty of Heath Sciences UiT- The Artic University of Norway

April 2023

To my grandmother, Josefa N. Mendoza Zavala vda. de Diaz.

## Acknowledgements

This PhD project was performed at the Molecular Inflammation Research Group (MIRG), Department of Medical Biology, Faculty of Health Sciences, the Artic University of Norway-UiT.

First and foremost, I would like to express my profound gratitude to my two wonderful supervisors, Ugo Moens and Malachy Okeke. I am infinitely grateful for all the support, patience and encouragement that you gave me during this journey that was not an easy one, but we succeeded!

Thank you Ugo, for always having the door to your office open so I could run to you when I had a problem or a silly question to ask. You were always there for me despite your busy schedule. I really appreciate your kind words of encouragement in our meetings that made me realize how much I have achieved and learnt. I am really impressed by how efficient you are. When I asked for a document, five minutes later you were knocking at my office door with the signed document!

Malachy, despite you not being here in Tromsø, I could always count on you! The distance was not a problem and you managed to supervise well me during these years. Even when something went wrong in my experiments you could guide me from Nigeria. Thanks for allowing me to contact you anytime. You were always available and ready to answer my questions. Sometimes I thought you would get mad because of my millions of questions, but you did not! You were always so kind and patient.

Both of you, Ugo and Malachy, were the right match. You complemented each other and made a great team! Thanks for having me as your PhD student, for sharing all your knowledge with me and believing in me.

I would like to thank Andreas Nitsche for giving me the opportunity to visit the Robert Koch Institute in Berlin. The research stay in your institute was a cornerstone in my PhD. Also, I want to give my infinite gratitude to Annika Brinkmann for introducing me to this new world called "bioinformatics". I really appreciate your patience during those two weeks in Berlin. Without you I would not have been able to analyze all my sequencing data.

I want to thank Carla Mavian. I am so grateful that we worked together, and you shared your knowledge in BEAST to me.

I want to thank Rolf Andersen from the Orakelet, you were just a star! When I had a problem with the server or any programs, you were always there helping me, providing solutions and you made my PhD life much easier by introducing me to the UiT server. Thanks a lot!!

Juan Daniel Montenegro thanks for being so patient and helping me with my bioinformatics troubles. You taught me new bioinformatics programs that are now part of the methodology used in my articles ¡Eres un capo!

Thanks to the past members of the Molecular Inflammation Research Group (Conny, Kashif, Aelita, Baldur, Dag, Marianne, Maria and Gianina) for creating a nice atmosphere in the lab. A special thanks to my lovely and sweet friend Connyzita, thanks for all the love, hugs and chocolates. I miss your priceless hugs!

I would like to thanks to the Old and New "Lab-gang" of the 9<sup>th</sup> floor (Adri, Clement, Jessin, Ekaterina, Ahmed, Bishnu, Srijana, Jeanette, Jalal, Maria, Gaute, Kjersti, Mushtaq, Hermoine, Theresa, Bhupender, Dorotha, Jonathan, Ken, Martin, Erick and Mikal), Almudena and Swapnil for the delicious common lunches, parties, coffee/cake breaks, laughs, talks, etc. Thanks for all the nice memories.

Clementine, thanks for being a wonderful friend, for being by my side in the most difficult moments. I could always count on you. You were like a big brother always advising me when I needed it most. Also, thanks for all the amazing memories (our trips, parties, birthday dinners, burgers, laughs, etc.), you just made my PhD journey and my life much lighter and easier, thank you from the bottom of my heart!

Adri, thanks a lot for being the big sister that I needed in Norway. Despite you moving to Oslo, you always called me, checked on me, advised me and supported me when I needed it the most, thanks, thanks, thanks!! You don't know how much I treasure you! I love you, my Adri!. My dear friend Jessin, thanks for sharing your bioinformatics knowledge with me and helping me when I was going crazy with the bioinformatics programs. Also, thanks for spoiling me with your delicious Indian food.

I also want to thank my lovely ladies (Alejandra, Karla and Angie) that made my life in Tromsø very pleasant with their great sense of humor and warm company. Sometimes life is not easy, but you showed me that women are extremely strong, brave, and courageous and can overcome any obstacle in life. Alejandra (Margothcita), thanks for the wonderful gift that you gave me (my cute Godson Sander) and for pampering me when I really needed it, you made me feel at home.

Thanks to my lovely family, especially to my beloved dad, grandmother and my sister Susan, for their endless love, always believing in me and cheering me up. Grandma thanks for always supporting me to pursue my dreams and keeping me in your prayers. If it was not for you, I could not be writing these words ¡Te amo con todo mi ser!

Above all, I want to thank God for being with me and guiding me during this journey and blessing me with wonderful people around me.

¡Gracias totales!

D.K.D.C

# Table of Contents

LIST OF AB	BREVIATIONS	iii
LIST OF FIC	GURES	v
LIST OF PA	PERS	vi
SUMMARY	·	1
1. INTRO	DUCTION	3
1.1 Po:	xvirus	3
1.2 Ort	thopoxvirus	3
1.2.1	Variola virus	3
1.2.2	Cowpox virus	4
1.2.3	Vaccinia virus	5
1.2.4	Monkeypox virus	7
1.2.5	Ectromelia virus	8
1.2.6	Alaskapox virus	8
1.3 Vii	rus structure	9
1.3.1	Genome organization	9
1.4 Vii	ral cycle	10
1.4.1	Virus entry and uncoating	11
1.4.2	Viral DNA replication	11
1.4.3	Virus assembly and egress	12
1.5 Vii	ral tropism	13
1.6 Ev	olution and phylogeny of orthopoxviruses	15
1.7 Ha	zard characterization of Modified Vaccinia virus Ankara	17
1.7.1	Host cell restriction of MVA	18
1.7.2	Nature and distribution of naturally circulating orthopoxviruses	19
1.7.3	Recombination in co-infection and superinfection	19
1.7.4	Homogeneity and genetic stability of MVA	21
2. RATIO	NALE OF THIS STUDY	22
3. GENER	RAL OBJECTIVE	24
4. METH	ODOLOGY	25
4.1 Vii	ruses, cells, co-infection and superinfection experiments	25
4.2 Vii	ral DNA extraction	27
4.3 Sec	quencing	27
4.4 Ge	nome assembling and annotation	28

	4.5	Gene content comparison	28
	4.6	Recombination analysis	29
	4.7	Phylogenetic analysis, patristic and genetic distances	29
	4.8	Phylodynamic evolutionary analysis of CPXV	31
5	. S	UMMARY OF THE MAIN RESULTS	32
6	. G	JENERAL DISCUSSION	34
7	. C	CONCLUSION AND FUTURE PERSPECTIVES	40
8	. R	EFERENCES	41

## LIST OF ABBREVIATIONS

AKMV	Ahkmeta virus
AKPV	Alaskapox virus
ATI	A-type inclusion
BPXV	Buffalopox virus
BHK	Baby hamster kidney
BI	Bayesian inference
CAM	Chorioallantoic membrane
CDS	Coding sequence
CEF	Chicken embryo fibroblast
CEV	Cell-associated enveloped virus
СНО	Chinese hamster ovary
ChPV	Chordopoxvirinae
CMLV	Camelpox virus
CNPV	Canarypox virus
CPXV	Cowpox virus
CrmB	Cytokine response modifier B
CrmD	Cytokine response modifier D
CVA	Chorioallantois VACV Ankara
dsDNA	double-stranded DNA
ECTV	Ectromelia virus
EEV	Extracellular enveloped virus
ER	Endoplasmic reticulum
ERA	Environmental risk assessment
EU	European Union
GATU	Genome Annotation Transfer Utility
GMO	Genetically modified organism
HA	Hemagolutinin
HPD	High posterior density interval
HSPV	Horsepox virus
ICTV	International Committee on Taxonomy of Viruses
IEV	Intracellular enveloped virus
IMV	Intracellular mature virus
ITR	Inverted terminal repeat
IV	Immature virus
IVN	Immature virus with nucleoid
LSDV	lumpy skin disease virus
MAFFT	Multiple Alignment Fast Fourier Transform
ML	Maximum Likelihood
moi	Multiplicity of infection
MPXV	Monkeypox virus
MVA	Modified Vaccinia virus Ankara
MVA-HANP	MVA vectored influenza vaccine
NGS	Next-generation sequencing
NP	Nucleoprotein
OPXV	Orthonovyirus
ORE	Open reading frame
nni	Post primary infection
PLNN PLNN	Raccooppoy virus
	Raccoultor vilus

RDP	Recombination detect program
RSV	Respiratory Syncytial virus
SKPV	Skunkpox virus
TATV	Taterapox virus
TGS	Third generation sequencing
tMRCA	Time to the most recent common ancestor
UK	United Kingdom
VACV	Vaccinia virus
VARV	Variola virus
VOCs	Viral Orthologous Clusters database
VPXV	Volepox virus
WHO	World health organization

## LIST OF FIGURES

 Figure 1. Schematic representation of the CVA and MVA genomes. The pink boxes represent the deleted regions in the CVA genome. The blue arrows represent ITR.
 7

 Figure 2. Schematic diagram of Vaccinia virus structure.
 9

 Figure 3. Schematic overview of the Vaccinia virus life cycle. IV, immature virion; IVN, immature virion with nucleoid; IMV, intracellular mature virion; IEV, intracellular enveloped virus; CEV, cell-associated enveloped virus; EEV, extracellular enveloped virus.
 10

 Figure 4. Co-infection and superinfection experiments in Vero cells. Co-infection, Vero cells were co-infected with CPXV-No-F1 and MVA-HANP. Superinfection 1, primary infection with CPXV-No-F1 and secondary infection with MVA-HANP at 4h post primary infection (ppi); Superinfection 2, primary infection with MVA-HANP and secondary infection with CPXV-No-F1 and secondary infection with CPXV-No-F1 at 4h ppi; Superinfection 3, primary infection with CPXV-No-F1 and secondary infection with MVA-HANP at 6h ppi; Superinfection 4, primary infection with MVA-HANP and secondary infection with CPXV-No-F1 at 6h ppi.

## LIST OF TABLES

Table 1. Cell lines susceptibility to MVA	14
---	----

## LIST OF PAPERS

## Paper I

Diaz-Cánova, D., Moens, U. L., Brinkmann, A., Nitsche, A., and Okeke, M. I. (2022). Genomic Sequencing and Analysis of a Novel Human Cowpox Virus With Mosaic Sequences From North America and Old World Orthopoxvirus. *Front. Microbiol.* 13. doi:10.3389/FMICB.2022.868887

## Paper II

Diaz-Cánova, D., Mavian, C., Brinkmann, A., Nitsche, A., Moens, U., and Okeke, M. I. (2022). Genomic Sequencing and Phylogenomics of Cowpox Virus. *Viruses 2022, Vol. 14, Page 2134* 14, 2134. doi:10.3390/V14102134.

## Paper III

Diaz-Cánova, D., Brinkmann, A., Nitsche, A., Moens, U., and Okeke, M. I. Whole genome sequencing of recombinant viruses obtained from co-infection and superinfection of Vero cells with Modified Vaccinia virus Ankara vectored influenza vaccine and a naturally occurring *Cowpox virus*. Manuscript

## SUMMARY

Modified vaccinia virus Ankara (MVA) is a promising orthopoxvirus (OPXV) vector vaccine candidate due to its host range restriction and good safety profile as a smallpox vaccine. It has been widely tested in clinical trials as a recombinant vector for vaccination against infectious diseases and cancers in humans and animals. Furthermore, it is being used as smallpox and Mpox vaccine. However, the extensive use of MVA and MVA vectored vaccines have the potential for MVA or MVA vectored vaccine to recombine with naturally circulating OPXV. Cowpox virus (CPXV) as a close relative of MVA is a potential candidate for recombination. Hence, the genetic diversity and evolution of CPXV was assessed in this work, as well as recombination in vitro between a naturally occurring CPXV and MVA vectored vaccine in cells in which MVA multiplies poorly. CPXV is classified as a single species; however, we demonstrated that CPXV might be an assemblage of several species based on its high genetic diversity, lack of monophyly, and close phylogenetic relationship with other OPXV. CPXV strains were separated into five major clusters rather than one monophyletic cluster. Furthermore, we described a new, distinct cluster closely related to *Ectromelia virus* (ECTV) and Abatino macacapox virus (Abatino) named "ECTV-Abatino-like CPXV". Additionally, we showed evidence that a Norwegian CPXV isolate was a natural occurring recombinant CPXV that might have emerged following multiple recombination events between different OPXV species from the Old World and North America. Under in vitro conditions, the progeny viruses obtained from co-infection and superinfection of Vero cells with MVA-HANP and CPXV-No-F1 had mosaic genomes and displayed parental and non-parental plaque phenotypes. Furthermore, some progeny viruses contained the transgene from MVA-HANP and regained genes that were deleted or fragmented in MVA-HANP. Overall, these findings will contribute to the environmental risk assessment of MVA and MVA vectored vaccines and to the improvement of the biosafety of MVA vectored vaccines.

## **1. INTRODUCTION**

## 1.1 Poxvirus

*Poxviridae* is a family of large double-stranded DNA (dsDNA) viruses <sup>1</sup>. The family is divided into two subfamilies based on its host range: Chordopoxvirinae (ChPV), viruses that infect vertebrates, and Entomopoxvirinae, viruses that infect insects. There are four and eighteen genera within Entomopoxvirinae and Chordopoxvirinae, respectively (https://ictv.global/taxonomy). Among Chordopoxvirinae, only species of the genera Orthopoxvirus, Parapoxvirus, Molluscipoxvirus, and Yatapoxvirus are known to cause human infections<sup>2</sup>. The best characterized genus within vertebrate poxviruses is Orthopoxvirus (OPXV). Some OPXV including Variola virus (VARV), Vaccinia virus (VACV)-like, Cowpox virus (CPXV), Monkeypox virus (MPXV), and Camelpox virus (CMLV) can cause human diseases<sup>3</sup>. The genus Orthopoxvirus includes twelve species. According to their endemism, OPXV are divided into the New World and the Old World OPXV. The Old World or African-Eurasian OPXV group contains: CPXV, VACV, MPXV, VARV, CMLV, Taterapox virus (TATV) and Ectromelia virus (ECTV). The New world OPXV group comprises three species that are endemic to North America: Raccoonpox virus (RCNV), Volepox virus (VPXV) and Skunkpox virus (SKPV)<sup>4</sup>. Recently, three novel OPXV species have been discovered in different locations: Abatino macacapox virus (Abatino) in Italy, Ahkmeta virus (AKMV) in Georgia and Alaskapox virus (AKPV) in the United States <sup>5-7</sup>, although AKPV is still not formally classified as an OPXV species.

## 1.2 Orthopoxvirus

#### 1.2.1 Variola virus

VARV is the most notorious OPXV, as it is the causative of smallpox. VARV has humans as an exclusive host and no animal reservoirs have been found <sup>8</sup>. Smallpox is a highly contagious airborne disease with high mortality rates (15-45%) <sup>9,10</sup> that caused around 300-500 million deaths world-wide in the 20<sup>th</sup> century <sup>11</sup>. The term "variola" for smallpox was derived from the latin word *various* (meaning spotted) or from *varus* (meaning pimples) <sup>12</sup>, and refers to the pustules that appears on the body and face. Later, the term "small pockes" (pocke means sac) was used to differentiate it from syphilis, "great pockes" <sup>13</sup>. The first historical record of smallpox was in Egypt from the mummy of Ramses V, who died 1157 BC <sup>14</sup>. From Egypt, the disease started to spread to other parts of the world. One of the first methods to mitigate smallpox was variolation, which consisted in the inoculation of smallpox pus or scabs into the skin (Indian method) or in intranasal insufflation of dried smallpox, but the mortality rate was approximately 2% <sup>9,10</sup>. After 1798, variolation was gradually replaced by a safer procedure called vaccination <sup>10</sup>. Compared to variolation, vaccination gave the same protection, but with less severe symptoms. In 1959, the World Health organization (WHO) launched a Global

Smallpox Eradication Program with the aim to eradicate smallpox <sup>10</sup>. From 1959 to 1977, the WHO organized vaccination campaigns world-wide. The last natural smallpox case was recorded in 1977 <sup>16</sup>, and in 1980 the WHO formally declared the eradication of smallpox, and the routine smallpox vaccination ceased <sup>17</sup>.

Prior to the eradication of smallpox, there were multiple VARV strains that were circulating. However, there were two main variants: *variola major* with a mortality rate of 20-45% (which is the most common cause of death related to smallpox) and *variola minor* or *alastrim*, characterized by a much lower mortality rate (1-2%) <sup>9,10</sup>. The latter variant was common in Western Africa and America and appeared in the end of the 19th century <sup>10</sup>. After smallpox eradication, the WHO decided that all VARV stocks should be destroyed or deposited in two international centers in the State Research Center of Virology and Biotechnology in Russia and the Center for Disease Control and Prevention in the United States <sup>18</sup>. Those are the only two WHO-approved centers that can conduct research on VARV. The WHO had planned to destroy all VARV stocks but given the potential for a bioterrorist attack, the destruction has been postponed for a few years until the development of new antiviral agents against smallpox and until the committee decides the best options for global public health <sup>19</sup>.

#### 1.2.2 Cowpox virus

CPXV is a zoonotic OPXV that is the causative agent of the disease cowpox. Historically, cowpox has been associated with the first vaccine used by the English physician Edward Jenner who established a safer method called "vaccination" to protect against smallpox in 1798. He had heard the folk tale that anyone who contracted cowpox could not catch smallpox <sup>20</sup>. Based on this belief, in 1796, he inoculated the boy James Phipps with cowpox pustules from the hand of the milkmaid Sara Nelmes. Some weeks after, Jenner infected the boy with smallpox pus and the boy did not develop the disease. After this finding, he repeated the same procedure with other children and concluded that vaccination offers a full protection against smallpox <sup>21,22</sup>. Jenner called the pustular material "variolae vaccinae" (smallpox of the cow) to make reference to the cow (latin word *vacca*) <sup>23,24</sup> and later the "*variolae vaccinae*" was referred to as vaccine <sup>25</sup>. However, until now, there is still uncertainty about the nature of the virus that Jenner used as a first vaccine. Probably he might have used VACV or *Horsepox virus* (HSPV) <sup>22,26–28</sup>. In 1798, Jenner published his discovery, which was the basis for vaccination and immunology <sup>22</sup>. Although vaccination had been first used by Benjamin Jesty 22 years before Jenner<sup>29,30</sup>, there is no evidence that Jenner knew about Jesty's vaccinations<sup>29</sup>. Thus, the credits for developing vaccination were given to Jenner<sup>29,30</sup>.

CPXV is endemic of Eurasia, mainly in Europe <sup>31–37</sup>. CPXV has the broadest host range among OPXV <sup>3,38</sup>, which is thought to be associated with its high number of host range genes <sup>39,40</sup>. Its natural reservoir hosts are probably wild rodents such as bank voles (*Myodes glareolus*), common voles (*Microtus arvalis*) and field voles (*Microtus agrestis*) <sup>31,41,42</sup>. CPXV infects many non-reservoir species such as felines, monkeys, dogs, alpacas, rats, cats and horses <sup>36,42–47</sup>. CPXV even causes spillover infections from infected animals to humans <sup>34,48–59</sup>. Most human

CPXV cases were caused by contact with infected cats <sup>49,59,60</sup>. In humans, the disease is usually self-limiting with pox lesions and mild symptoms, but it can lead to fatal infections, especially in immune-compromised individuals <sup>61–63</sup>. The first zoonotic case was reported in the Netherlands in 1985, in which a woman was infected with CPXV from a domestic cat <sup>64</sup>. In the last decades, multiple lethal and non-lethal CPXV outbreaks in animals have been reported as well as human cases of CPXV infections <sup>42,61–63,65–67</sup>. In the Fennoscandian region, CPXV infections in humans and felines have been reported (CPXV-No-H1, CPXV-No-H2, CPXV-Swe-H1, CPXV-Swe-H2, CPXV-No-F1 and CPXV-No-F2) <sup>45</sup> <sup>45,68–72</sup>. Interestingly, one of these Fennoscandian CPXV isolates, CPXV-No-H2, was a peculiar CPXV strain <sup>71</sup>. The phylogenetic analysis using the *p4c* gene revealed that CPXV-No-H2 was clustered separate from the other CPXV isolates. This was evidence of the genetic diversity among CPXV isolates. Other studies have also revealed that CPXV is genetically heterogeneous <sup>70,72–78</sup>.

The traditional nomenclature used in poxvirus taxonomy, that is naming the virus after the host from which it was isolated, brought confusion in the classification of cowpox. For instance, cows are susceptible to both CPXV and VACV. Jenner described cowpox as a disease characterized by pustules on the nipples and utters of cows that were infected from horses <sup>22</sup>. Later, Downie defined CPXV as strains that were isolated from the spontaneous disease in cattle or from human lesions caused by directly infection from that source. Additionally, he described some biological properties of CPXV such as the presence of A-type inclusion bodies (ATI) and red hemorrhagic pocks on the chorioallantoic membrane (CAM) of chicken eggs after infection <sup>79</sup>. Since then, the classification of CPXV has been based on host specificity and the two main criteria described by Downie. As a consequence, several viruses have been classified as CPXV <sup>80–83</sup>. The classification of CPXV is still a matter of debate. It has been proposed that CPXV is not one single species and it may contain more than one species <sup>70,72,73,75,76,84</sup>.

#### 1.2.3 Vaccinia virus

VACV has been used as a vaccine against smallpox in the 20<sup>th</sup> century <sup>79</sup>. Although it is still not clear when VACV started to be used, it is thought that at some point during 19th century cowpox was swapped for VACV <sup>10</sup>. However, recent evidence showed that old smallpox vaccines were more similar to HSPV <sup>22,26–28</sup>, which is more closely related to VACV than to CPXV. Therefore, it has been suspected that Jenner may have used a HSPV-like virus instead of CPXV <sup>26,85,86</sup>.

The exact origin of VACV is still unknown as well as its natural reservoir, even though VACV is the most studied OPXV. Since VACV strains have been attenuated in the laboratory, it was thought that VACV strains were unable to establish an infection in nature <sup>3</sup>. However, VACV-like infections have been reported in multiple species (such as cat, cattle, buffaloes and rabbit) and in different places throughout the world <sup>3,47,87–93</sup>. VACV and VACV-like have a broad host range <sup>3,94</sup> and are considered endemic in South America and Asia <sup>94</sup>.

There are several variants of VACV-like that have been described such as HSPV, Buffalopox virus (BPXV) and Brazilian VACV-like <sup>3,47,87</sup>. BPXV outbreaks have occurred in several countries, affecting mainly buffaloes but also humans <sup>89,95,96</sup>. In South America, multiple outbreaks of VACV-like infections have been recorded, especially in Brazil <sup>3,97–99</sup>. Brazilian VACV-like strains were mainly isolated from cattle and humans, although they have been detected in other animals <sup>3,100–102</sup>. It is likely that Brazilian VACV-like derived from a spillback of a vaccine strain to wild hosts rather than being natural VACV populations circulating in an unknown reservoir <sup>3,85,103</sup>. VACV-like infections in humans were associated with infected animals (zoonotic transmission) <sup>104,105</sup>. Although human-to-human transmission (interhuman transmission) has also been reported <sup>106,107</sup>.

Several VACV strains have been used to develop smallpox vaccines. There are four major types of VACV vaccines: first-, second-, third- and fourth-generation vaccines <sup>108,109</sup>. The firstgeneration vaccines were live vaccines produced in live animals and were used during the Global Smallpox Eradication campaign<sup>10,110</sup>. Many VACV strains were used to develop firstgeneration vaccines, for instance the New York City Board of Health (NYCBH) strain was used in the USA, the Temple of Heaven (Tian Tan) strain was used in China and the Lister strain was used in Africa, Asia, Europe and the USA <sup>10,109,111</sup>. Nonetheless, these vaccines were not recommended due to safety problems. The second-generation vaccines were produced in tissue culture with good manufacturing practices <sup>109</sup>. However, like first generation vaccines, they may still cause severe side effects <sup>109,112</sup>. The poor safety profile of VACV second-generation vaccines led to the third-generation vaccines. These vaccines are live but attenuated VACV that maintained their immunogenicity and protection against smallpox <sup>108</sup>. The attenuation was obtained after multiple passages of the parental virus in cell cultures, which generated random mutations in its genome <sup>109</sup>. Several attenuated VACV strains have been developed such as modified Vaccinia virus Ankara (MVA) and Lister-16m8 (LC16m8)<sup>113,114</sup>. In the fourthgeneration vaccines, the attenuation is achieved using genetic engineering. The genomes of the fourth-VACV strains are manipulated by, for example, inserting, deleting or interrupting specific genes <sup>109</sup>. An example of these vaccines is NYVACV <sup>115</sup>. Moreover, subunit-based vaccines are included within the fourth-generation vaccines <sup>116,117</sup>. Recombinant DNA technology has played an important role in the development of VACV-based vaccines. The ability of incorporate foreign DNA (up to 25kb) into the VACV genome <sup>118</sup> opened the opportunity of using VACV as viral vector against other diseases.

#### Modified Vaccinia virus Ankara

MVA was originally developed in the 1970s as a smallpox vaccine. MVA is an attenuated VACV strain derived from Chorioallantois VACV Ankara (CVA). CVA was passaged more than 500 times in primary chicken embryo fibroblasts (CEF) to be attenuated. After 516 passages, an attenuated virus was obtained and CVA was renamed MVA <sup>119</sup>. Upon more than 570 passages, the CVA genome had suffered six major deletions as well as minor deletions, insertions and point mutations (Figure 1). As a result, the CVA genome was reduced by around 13%, from 208 kbp (CVA) to 178 kbp (MVA) <sup>120–122</sup>. The mutations led to the deletion, fragmentation and disruption of multiple genes in MVA responsible for evasion of the host

immune response and regulating the viral host range, such as the *K1L*, *C12L* and *C16L* genes  $^{122,123}$ . Although the six major deletions took place in genomic regions of CVA where truncated or fragmented genes pre-existed (e.g. *A39R* and *A55R* gene). The small mutations affected 122 of the 195 genes in MVA  $^{122}$ . It is presumed that the genetic modifications render MVA incapable to multiply in most mammalian and human cells  $^{121,124,125}$ .



**Figure 1**. Schematic representation of the CVA and MVA genomes. The pink boxes represent the deleted regions in the CVA genome. The blue arrows represent ITR.

MVA was administrated to over 120,000 people in Germany when smallpox was not endemic in the country. Among those vaccinated were children, immunocompromised individuals and elderly people. The vaccines showed mild or moderate adverse effects, such as local reaction (redness) and fever <sup>114,126–128</sup>. MVA-BN has been authorized for use as a smallpox vaccine in Europe (with the trade name Imvanex), Canada (with the trade name Imvamune) and in USA (with the trade name Jynneos) <sup>129,130</sup>. Furthermore, it has been approved as a Mpox vaccine <sup>131</sup>. MVA-BN is derived from the MVA-584 strain, following six rounds of plaque purification. It has a more restricted host range than other MVA strains <sup>132</sup>. Due to its excellent safety profile, attenuation in vivo, immunogenicity in vivo, and the ability to incorporate and express foreign DNA with correct post-translational modification, MVA is one of the promising viral vectors for development of recombinant vaccines and gene delivery <sup>133,134</sup>. MVA has been used to develop recombinant vaccines against numerous diseases, both in humans and animals, and cancers. The development of vaccines using MVA vectors are in different phases of clinical trials, including MVA vaccines against HIV <sup>135,136</sup>, Ebola <sup>137–140</sup>, respiratory syncytial virus <sup>141</sup>, Middle East Respiratory Syndrome <sup>142</sup>, cytomegalovirus <sup>143</sup>, influenza <sup>144,145</sup>, tuberculosis <sup>146</sup> and malaria <sup>147–149</sup>.

#### 1.2.4 Monkeypox virus

Mpox is a zoonotic disease caused by MPXV. The virus causes mild symptoms but in immunosuppressed patients, individuals with pre-existing medical conditions, elderly people and young children the disease can be more severe with fatal outcomes <sup>150–153</sup>. Similar to smallpox, Mpox is more often lethal in children than in adults <sup>151,154,155</sup>. Mpox is endemic in

West and Central Africa <sup>156</sup>. MPXV strains are divided into Clade I (formerly Central African clade) and Clade II (formerly West African clade) <sup>157</sup>. The Clade I has a higher fatality rate (10.6%) than the Clade II (3.6%) <sup>158</sup>. There are two routes of MPXV transmission: (1) from animal to human (zoonotic) and (2) from human to human (interhuman), which includes mother-to-child (vertical transmission) <sup>153,155,158</sup>.

MPXV was first identified in captive monkeys in Denmark in 1958<sup>159</sup>. Natural infections of MPXV have been detected in other mammalian species<sup>160</sup>. Although there is no definitive reservoir of MPXV, it is presumed that African rodents are the reservoir<sup>160</sup>. The first human Mpox case was reported in the Democratic Republic of Congo in 1970<sup>161</sup>. After this, human cases of Mpox have been reported in endemic countries<sup>160,162,163</sup>. From 2013 to 2021, sporadic non-endemic cases imported from endemic countries were reported in the USA, Singapore, Israel and the United Kingdom (UK)<sup>164–168</sup>. It is thought that those MPXV outbreaks were spillovers from animals to humans<sup>157,169</sup>. In May 2022, the global Mpox outbreak started in the UK <sup>170</sup>, and since then 86,724cases have been confirmed in 110 countries<sup>171</sup>.

#### 1.2.5 Ectromelia virus

ECTV is the causative agent of mousepox, a lethal, acute exanthematous disease of laboratory mouse colonies <sup>172,173</sup>. The natural reservoir of ECTV is likely wild mice. One ECTV strain was isolated from wild mice in Germany<sup>174</sup>. ECTV has a very narrow host range, its host is the mouse. However, human cases of ECTV infection have been reported in China and one case in fox <sup>175–177</sup>. The first ECTV strain (ECTV-Hampstead) was discovered in a laboratory mouse colony in Hampstead, the UK<sup>173</sup>. After that, several outbreaks occurred in Europe, Japan, China and the USA <sup>174,178,179</sup>. ECTV-Hampstead was the progenitor of the outbreaks in Europe. It is thought that ECTV-Hampstead was also responsible for the outbreaks in Russia, Japan and the USA (from the 1980s) <sup>174</sup>. The ECTV outbreaks in the USA caused high mortality in laboratory mice and losses of millions of dollars <sup>180</sup>. Mousepox was a serious threat to laboratory mice, but it has been eliminated due to increased health surveillance and improvements in animal facilities <sup>180</sup>. However, mousepox is still relevant as it is the best small animal model of smallpox. In addition, it has been used in studies of OPXV infection and pathogenesis <sup>172,181,181,182</sup>. Compared to CPXV, ECTV produces white lesions on chorioallantoic membrane (CAM) of chicken eggs and V<sup>-</sup> ATI phenotype. However, ECTV-Hampstead produced the wild type V<sup>+</sup> ATI and the atypical V<sup>+/</sup> ATI. Furthermore, it contained a complete p4c gene. Whereas the other ECTV strains contained a truncated p4c gene and produced V<sup>-</sup> ATI <sup>174,183</sup>.

#### 1.2.6 Alaskapox virus

AKPV has not been classified as OPXV, but it has been suggested that it represents a novel OPXV. AKPV was isolated from a patient in Alaska, the USA. The distribution of AKPV is unknown as well the infection source of the patient. It has been speculated that either the patient was in contact with fomites brought from abroad or the virus was circulating in small mammals,

like other OPXV, in the areas close to the residence of the patient. The sampling of small mammals and the fomites tested negative for OPXV, although the sampling was limited <sup>7,184</sup>.

## 1.3 Virus structure

Poxviruses are ovoid or brick-shaped viruses (220-450 nm x 140-260 nm)<sup>185</sup>. The virions are composed of three main substructures: viral core, one or two lateral bodies and the viral membrane(s) (Figure 2)<sup>186-188</sup>. The core contains the dsDNA genome, structural proteins and enzymes needed for the transcription of early viral genes <sup>189–191</sup>. The core is encased by a core wall that has a biconcave shape <sup>186</sup>. The core wall is composed of two layers: the inner layer or "smooth layer", formed by A3; and the outer layer or "palisade layer", formed by A10 and A4 <sup>192</sup>. The lateral bodies reside on the concave regions of the core <sup>187,193</sup>. They are proteinaceous structures that carry host modulatory proteins such as the phosphoprotein F17R, the phosphatase H1 and a glutaredoxin-2 (G4L) <sup>193</sup>. The virus is surrounded by one lipoprotein bilayer membrane and one additional outer membrane (envelope) <sup>194</sup>.



Figure 2. Schematic diagram of Vaccinia virus structure.

#### 1.3.1 Genome organization

The genome of poxviruses is a double strand DNA that varies in length from 122 kbp, in *Cetacean poxvirus* of OPXV genus <sup>195</sup>, to 360 kbp, in *Canarypox virus* (CNPV) of the *Avipoxvirus* genus <sup>196</sup>. Poxvirus genomes contain from approximately 133 genes (in <u>Yatapoxvirus</u> and Parapoxvirus) to 328 genes (in CNPV) <sup>196</sup>. Their genome consists of the central region and two variable regions at the termini. The end of the variable region contains inverted terminal regions (ITR). ITR are identical sequences in inverse direction at the opposite end with hairpin loops that join the two DNA strands <sup>1</sup>. ITR are variable in size between species. and can contain genes that are present in diploid copies in the genome or not contain genes, as in VARV <sup>197–199</sup>.

The central region of the genome is highly conserved between the poxviruses, sharing similar gene location (synteny) and genome organization <sup>84,198</sup>. In this region, there are 49, 90 and 109 genes that are conserved among poxviruses, chordopoxviruses and OPXV, respectively <sup>198,200–202</sup>. The conserved genes are involved in essential functions such as DNA replication, transcription, and virion assembly <sup>84,200,202</sup>. In contrast, the variable regions comprise genes that encode proteins involved in the interaction with the host including host range, immunomodulation and pathogenicity. These genes are termed as "non-conserved genes" or "accessory genes" <sup>8,198,200,201</sup>. Compared to the conserved genes, those genes are more divergent and not highly conserved between poxviruses <sup>198,202,203</sup>. Furthermore, those genes have more variability in gene length than the genes in the central region <sup>198</sup>. Thus, the main differences in the genome of OPXV species are in the terminal variable genomic regions <sup>204</sup>.

## 1.4 Viral cycle

The prototype of the OPXV is VACV. Thus, the viral cycle is described with reference to VACV. The complete viral cycle of VACV occurs in the cytoplasm of the host cell <sup>1</sup> (Figure 3).



**Figure 3.** Schematic overview of the *Vaccinia virus* life cycle. IV, immature virion; IVN, immature virion with nucleoid; IMV, intracellular mature virion; IEV, intracellular enveloped virus; CEV, cell-associated enveloped virus; EEV, extracellular enveloped virus.

#### 1.4.1 Virus entry and uncoating

The viral cycle starts with the viral entry (binding and fusion) (Figure 3). VACV attaches to the cell through the interaction of glycosaminoglycans and viral membrane proteins. There are at least 15 proteins involved in the viral entry: four proteins used for binding to the cell (D8, A27 and H3 and A26) and eleven required for viral fusion (A16L, A21L, A28L, F9, G3L, G9R, H2, J5, L1R, L5R and O3L)<sup>205</sup>. The last ones are called the entry-fusion complex (EFC). The virion entry occurs either through macropinocytosis or direct fusion of the viral membrane with the cell membrane <sup>1,206</sup>.

Upon entry, the core and the lateral bodies are released in the cytoplasm <sup>205</sup>. The lateral bodies are dissociated from the core and disassembled <sup>207</sup>. The core is released in the cytoplasm and transported by microtubules close to the endoplasmic reticulum or perinuclear region of the cytoplasm <sup>208–210</sup>, followed by the transcription of early viral genes <sup>211</sup>. The expression of early genes does not require *de novo* protein synthesis because the viral particles contain their own transcription machinery <sup>1,212</sup>. More than 100 genes are transcribed inside the viral core <sup>213</sup> and the early mRNAs are detected within 20 min post infection <sup>214,215</sup>. The transcripts are extruded from the core and translated in the cytosol. The core is uncoated and the viral genome is released to the cytoplasm (Figure 3) <sup>211</sup>.

When the cell is infected with VACV, superinfection can be prevented by the interaction of A56 and K2 proteins on the membrane of the infected cell with the A16-G9 subcomplex of EFC of subsequent viruses, which blocks the viral entry after membrane fusion <sup>216,217</sup>. The mechanism by which viruses prevents superinfection with a second virus is called superinfection exclusion. There is another mechanism of superinfection exclusion that does not require the A56 or K2 proteins and prevents the viral fusion of the superinfecting virion and the infected cells, but this mechanism is not completely elucidated, yet <sup>218</sup>.

#### 1.4.2 Viral DNA replication

After the genome has been released, viral DNA replication starts, followed by the expression of intermediate and late genes <sup>211</sup>. The viral genome in the cytoplasm is surrounded by membranes derived from the rough endoplasmic reticulum (ER), forming a "virus factory" or "replication factories" in the cytoplasm (Figure 3) <sup>187,219,220</sup>. It has been proposed that the ER membranes might protect the viral genome from cellular recognition and degradation. Viral DNA replication occurs in the viral factories <sup>211</sup>. Each viral factory is derived from one viral particle <sup>208,221</sup>. Since the cell DNA machinery is located in the nucleus, VACV produces its own viral DNA replication machinery before viral DNA synthesis. The early viral proteins that mediate the viral DNA replication are: B1, I3, H5, G5, A50, E9, A20, D4 and D5 <sup>221–232</sup>.

Transcription and translation of intermediate and late proteins also take places in the viral factories as well as the viral assembly <sup>233</sup>. The activation of intermediate and late genes requires viral DNA replication <sup>234</sup> as the newly replicated DNA serves as a template for the transcription of these genes <sup>235</sup>. Most intermediate and late mRNAs are detected at 100 min post infection

<sup>214,234</sup>. The intermediate viral genes encode DNA binding and packaging proteins, coreassociated proteins and late transcription factors <sup>213</sup>, whereas the late viral genes encode structural proteins, the viral RNA transcription machinery, early gene transcription factors and proteins involved in morphogenesis and entry <sup>236,237</sup>.

#### 1.4.3 Virus assembly and egress

The viral assembly occur in the viral factories (Figure 3) <sup>238</sup>. During the morphogenesis VACV produces four types of virions: intracellular mature virion (IMV), intracellular enveloped virus (IEV), cell-associated enveloped virus (CEV) and extracellular enveloped virus (EEV) <sup>239</sup>. IMV has a single lipid bilayer membrane compared to CEV and EEV that contain one additional membrane (envelope), derived from either endosomes or trans-golgi <sup>240,241</sup>. The virion morphogenesis begins with the formation of viral crescents, which are open membranes derived from the ER <sup>242</sup>. The crescent grows until it forms a spherical immature virion (IV). Before it closes the viral genome is packaged into IV. These IV are called IV with nucleoid (IVN). Then IVN matures to intracellular mature virion (IMV) (Figure 3) <sup>243</sup>.

IMVs are released from the viral factory. The majority of IMV stay inside the cell until cell lysis. In species such as CPXV, ECTV and AKPV, IMV are occluded within a dense protein matrix in the cytoplasm called ATI bodies <sup>79,174,184</sup>. Three phenotypes of ATI exist: IMV are inside the ATI matrix (V<sup>+</sup>), ATI with no IMV inside or on its surface (V<sup>-</sup>) and IMV are only in the periphery of ATI (V<sup>+/</sup>) <sup>244,245</sup>. The *atip, p4c* and *A27L* genes are involved in the production of the wild type V<sup>+</sup> ATI <sup>246–248</sup>. The other IMV are transported from the viral factories to the site of wrapping on microtubules. IMV are wrapped by a double membrane derived from either endosomes or trans-golgi <sup>240,241</sup>, resulting in intracellular enveloped virus (IEV). The double membrane contains nine proteins (A33, A34, A36, A56, B5, E2, F12, F13 and K2). The deletion of any of these proteins, except for A56 and K2, causes a small plaque phenotype <sup>1</sup>. The deletion or mutation of A56 or K2 causes the formation of syncytia (fusion of infected cells) <sup>249 250–253</sup>.

The transportation of the IEV to the cell surface and egression needs three proteins A36, F12 and E2 <sup>254,255</sup>. A36 and F12 are only present on the outer membrane of the IEV <sup>256</sup>. IEV is moved to the cell surface and its outer membrane fuses with the cell membrane, exposing the virion on the cell membrane <sup>239</sup>. Upon fusion A36 is accumulated in cell membrane <sup>257</sup>. The viral particle has one lesser membrane and if it is retained on the surface is called cell-associated enveloped virus (CEV). When CEV is released from the cell, it is known as extracellular enveloped virus (EEV) <sup>239</sup>. CEV is important for cell-to-cell spread <sup>239,258</sup>. A33, A34 and B5 proteins are required for efficient cell-to-cell spread <sup>259–261</sup>. These proteins are associated with the formation of comet-shaped plaques <sup>259,262,263</sup>. When EEV reaches an infected cell, the infected cell expressing A33 and A36 on the membrane to repel the superinfecting EEV. A33 and A36 induce actin tails to spread EEV to neighboring cells <sup>264</sup>. This is another form of superinfection exclusion.

## 1.5 Viral tropism

The poxvirus tropism can be classified in three levels: cell tropism, tissue tropism and host tropism <sup>265</sup>. The cell tropism refers to the ability of the virus to infect cell cultures. Based on this ability, cells can be defined as permissive, semi-permissive and non-permissive. The tissue and host tropism are the ability of the virus to infect tissue and host species, respectively <sup>265</sup>. The initiation of the viral cycle for many viruses begins with the binding to the cell. Thus, it is considered that the viral binding has an important role in cell and tissue tropism <sup>265</sup>. However, several poxviruses can successfully enter to non-permissive cells <sup>266–269</sup>, as it has been observed for MVA <sup>119</sup>. This indicates that cell tropism is affected by other downstream events <sup>8,270</sup>. The cell tropism depends on the ability of the virus to manipulate the intracellular antiviral pathways that is activated upon viral entry, the ability of the cell to provide complementing host factors needed for the viral multiplication <sup>8,271,272</sup> as well as the presence/absence of antiviral genes <sup>272</sup>. In the poxviral genome, within the non-conserved genes, there are genes involved in the modulation of the host antiviral response. These genes are defined as virulence genes <sup>8,38</sup>. Within the virulence genes, the ones that are required for the successful multiplication of poxviruses in a set of cultured cells are referred to as "host range genes" <sup>8,38</sup>. The host range genes encode proteins called host range factors that target antiviral and anti-inflammatory host pathways <sup>38</sup> and influence the virus tropism <sup>8</sup>. In poxvirus, 38 host range gene homologs have been identified and are classified in 12 gene families <sup>38,39,271</sup>. The most studied host range genes are E3L and K3L  $^{38}$ .

VACV can productively multiply in most mammalian and avian cells, but not in Chinese hamster ovary (CHO) cells <sup>273</sup>. The insertion of the CPXV Chinese hamster ovary host range gene (*CP77*) permitted VACV to multiply in CHO cells <sup>274</sup>. The first host range genes identified in VACV that are required for multiplication in human cells were *K1L* and *C7L* <sup>275–277</sup>. It has been shown that the deletion of *K1L* and *C7L* in VACV leads to abortive infection in human cells, pig kidney cells and rabbit kidney RK13 cells <sup>275–278</sup>. The multiplication deficient in human and pig kidney cells is overcome by the insertion of either *K1L*, *C7L* or *CP77* gene, whereas multiplication in rabbit kidney cells is restored by the insertion of either *K1L* or *CP77* gene, but not the *C7L* gene <sup>273,277,278</sup>. Other host range genes have been identified in VACV, *E3L* and *C12L* (encoding serine protease inhibitor-1, SPI-1). The *E3L* gene is required to grow VACV in Vero cells and human HeLa cells, but not in rabbit RK-13 cells, hamster BHK cells and CEF cells <sup>279–281</sup>. *C12L* is needed for VACV multiplication in human A549 cells <sup>282,283</sup>.

MVA has a restricted host range and is unable to productively infect human and most mammalian cells <sup>121,124,284</sup>. However, MVA still multiplies in human cells such as osteosarcoma TK–143B cells <sup>123,124,132,284,285</sup>. Furthermore, it has been observed that MVA strains differ in their ability to multiply in different human cell lines <sup>132</sup>. MVA also multiplies efficiently in some non-human mammalian cell lines such as baby hamster kidney (BHK-21) cells (Table 1) <sup>121,124,284–288</sup>.

	Species	Multiplication of MVA strains								
Cell lines		MVA <sup>a</sup>	MVA- II/85	MVA- VR1508	MVA- BN	MVA- B	MVA- 572	MVA- 1721	MVA- 574	MVA- LZ
MDCK	Canine; kidney	SP							NP	
Ederm	Equine; skin								NP	
RO5R	Fruit bat Egyptian			Р						
RO5T	Fruit bat Egyptian			Р						
RO6E	Fruit bat Egyptian			Р						
CHL	Hamster Chinese; lung	NP								
СНО	Hamster Chinese; ovaries	NP		NP						
BHK-21	Hamster Syrian; kidney	Р		Р	Р	Р				Р
HEK-293	Human; kidney	NP		NP	NP	NP	NP	Р		SP
HeLa	Human; cervix	NP	SP		NP	NP	NP	Р	NP	SP
SW839	Human; kidney	NP								
TK-143B	Human; bone	Р	SP		NP		NP	Р		
MRC-5	Human; lung		NP		NP	NP			NP	
FS-2	Human; skin		NP							
Caco-2	Human; colorectal			NP						
FHs74int	Human; esophagus			NP						
Hutu-80	Human; small intestine			NP						
A549	Human; lung			SP						
HaCaT	Human; skin				NP		SP	Р		
HRT18	Human; colon								NP	
Hep-2	Human; larynx								NP	
SK 29 MEL 1	Human; skin									NP
LC5	Human; lung									NP
85 HG 66	Human; brain									NP
U138	Human; brain									NP
C8166	Human; blood (T-cell)									NP
HUT 78	Human; blood (T-cell)									NP
SY9287	Human; blood (B-cell)									NP
MA104	Monkey; kidney								Р	
MIB	Monkey; blood (B-cell)									NP
BSC-1	Monkey African Green; kidney	SP								
CV1	Monkey African Green; kidney	SP,P								Р
Vero	Monkey African Green; kidney	SP		SP	SP	SP			SP	
FRhK-4	Monkey Rhesus; kidney	NP								
Balb3t3	Mouse; embryonal fibroblast		NP			NP				

NMULI	Mouse; glandular epithelial		SP						
AG101	Mouse; skin			NP		NP	NP		
DBT	Mouse; brain							NP	
PK(15)	Pig; kidney	NP	NP						
BEL	Pig; lung							SP	
MDBK	Pig; kidney							NP	
RK13	Rabbit; kidney	NP	NP					NP	
RAB-9	Rabbit; skin	NP							
SIRC	Rabbit; cornea	NP							
IEC-6	Rabbit; small intestine		Р		SP				
H4IIE	Rat; liver		NP						

P: permissive, SP: semi-permissive, NP: non-permissive. <sup>a</sup> MVA whose strain, variant or passage number was not stated. Data are summarized from Okeke *et al.* <sup>133</sup>.

In non-permissive cells, the viral cycle of MVA follows the same first steps of the VACV life cycle. MVA enters to the cell, expresses the early genes, replicates the viral genome, expresses the intermediate and late genes, but the cycle is blocked in the viral assembly, leading to immature virus particles that stay inside the infected cells <sup>119</sup> or dense particles <sup>287,289</sup>. Thus, MVA cannot produce infectious progeny <sup>124,284,286,287</sup>. Recombinant MVA vectored influenza vaccine (MVA-HANP) has a similar cell permissiveness compared to MVA, except in A549 and NMULI that are non-permissive to MVA-HANP <sup>287</sup>.

## 1.6 Evolution and phylogeny of orthopoxviruses

The orthopoxviruses, as dsDNA viruses with proofreading DNA polymerases, evolve slowly compared to RNA viruses <sup>290</sup>. However, OPXV are not static, they can suffer genomic and phenotypic changes. The evolution of OPXV is driven by several molecular mechanisms such as point mutations, gene duplication, gene loss, homologous and non-homologous recombination and gene gain by horizontal gene transfer <sup>291</sup>. These mechanisms play an important role in the evolution of OPXV <sup>200,291</sup>.

The substitution rate of OPXV have been estimated as 1.7-6.5 x 10<sup>-6</sup> substitutions per site per year (subs/site/year) <sup>292–295</sup>. It is thought that OPXV evolve slowly because of the high fidelity of DNA replication by DNA polymerase <sup>256</sup>. However, despite of their low mutation rate, OPXV can evolve rapidly as it has been observed in MPXV <sup>291</sup>. Since 2018, the MPXV genomes have accumulated 50 single nucleotide polymorphisms (SNP). These number of SNP is higher with respect of the estimated substitution rate of OPXV. The rapid evolution of the recent MPXV outbreak may be due to human adaptation <sup>296</sup>. In contrast, the VARV genome has been quite stable over the years as it was well adapted to its host (humans) <sup>199</sup>. However, point mutations have also been observed in the OPXV genomes during the course of passaging in the laboratory <sup>297–299</sup>.

Another mechanism that plays a significant role in OPXV evolution is recombination <sup>84,200</sup>. Recombination has been observed *in vitro* and *in vivo* between strains of the same species (intraspecies) and between different species (interspecies) <sup>7,71,72,77,300–304</sup>. Additionally, recombination between OPXV species with non-OPXV has been described <sup>305</sup>. Among CPXV strains, there is evidence of recombination between different CPXV clusters <sup>77</sup>. Similarly, recombination has been observed between VACV strains <sup>303,306</sup>. Furthermore, interspecies recombination has been reported between AKPV and ECTV <sup>7</sup>. The study of Gigante *et al.* demonstrated that ECTV may contain AKPV genome sequence <sup>7</sup>. Another study also showed recombination between ECTV and other OPXV (i.e., CPXV) <sup>71</sup>. This work demonstrated evidence of recombination in a CPXV strain that contained an ECTV-like *atip* gene <sup>71</sup>. Another study described that AKMV may have undergone recombination with CPXV. Some AKMV isolates contained a sequence of 6 kbp similar to CPXV in the left terminal region <sup>6,302</sup>.

The phylogenetic analyses of OPXV showed that its members were split into two groups: the New World OPXV (RCNV, SKPV and VPXV) and the Old World OPXV (MPXV, CPXV, VACV, TATV, CMLV, VARV, ECTV, Abatino and AKMV)<sup>7,74,78,307</sup>. AKPV branched separately between the two groups despite its place of isolation (the USA)<sup>7,74,307</sup>. Based on the AKPV gene content, AKPV was more similar to the Old World OPXV than the New World OPXV. However, AKPV contained seven genes (*AKPV009, 010, 024, 025, 203, 204* and *205*) that encoded proteins most similar to proteins of Murmansk and NY\_014 poxviruses. The presence of these genes in the AKPV genome might be a result of more than one recombination event with Murmansk. Moreover, two putative recombinant regions between ECTV and AKPV were also found in the AKPV genome <sup>7</sup>.

Within the Old World OPXV, AKMV formed the deepest branch <sup>6,7,74,184,302,307</sup>. The isolates from the same species formed monophyletic clades, except for CPXV that did not cluster as a monophyletic group <sup>7,73–75,77,78,307</sup>. CPXV isolates were closely related to the Old World OPXV, except for AKMV <sup>7,74,78,302</sup>. Despite the similar genomic region (recombinant region) between some AKMV isolates and CPXV, AKMV did not cluster with CPXV in the study of Jeske *et al.* that used the complete genomes <sup>78</sup>.

The phylogenetic studies showed that CPXV isolates were separated into at least five clusters named CPXV-like 1, CPXV-like 2, CPXV-like 3, VACV-like CPXV and VARV-like CPXV <sup>72–78,308</sup>. The phylogenetic relationship between CPXV-like 1, 2 and 3 and the other OPXV varied in the phylogenetic studies <sup>74,77,78,307,309</sup>. VACV-like CPXV had a close phylogenetic relationship with VACV. VARV-like CPXV was closely related to VARV, TATV and CMLV <sup>73,74,77,78,302,307</sup>.

Various phylogenetic studies showed that CPXV was the only polyphyletic member of OPXV and also demonstrated the genetic diversity in CPXV isolates <sup>70,72–78</sup>. Carrol *et al.* showed the diversity of CPXV isolates using the genetic and patristic distances between CPXV isolates using as threshold values the distances between TATV and VARV. Their study also revealed that CPXV comprised several (up to 5) species <sup>75</sup>. Another study also revealed that CPXV was

genetically heterogeneous and could be divided into six cluster species based on the phylogeny and the genetic and patristic distances (using the distances between TATV and CMLV as a threshold)<sup>72</sup>. Mauldin *et al.* suggested that there are five (up to 14) lineages in CPXV based on monophyly and genetic distance criteria<sup>73</sup>.

Compared to the other OPXV, CPXV had the largest genome, containing an almost full repertoire of OPXV genes (including OPXV accesory genes) and had the widest host range <sup>40,84,198,201</sup>. Based on that, it has been proposed that the common ancestor of the Old world OPXV (except for AKMV) is a CPXV-like virus <sup>40,84,198,201</sup>. The molecular evolution of OPXV is still unclear. A study of the molecular evolution of OPXV revealed that the emergence of OPXV took place about 42,000 years ago <sup>307</sup>. An earlier study of Babkin et al. showed that OPXV emerged 51,000 years ago, although the new OPXV species (i.e. AKMV, AKPV and Abatino) were not part of the dataset <sup>292</sup>. The New World OPXV first separated from the other OPXV<sup>307</sup>. Then, AKPV diverged from the Old World OPXV approximately 19,000 years ago. The emergence of the Old World OPXV was about 11,000 years ago. Within the Old World OPXV, the first to diverge was AKMV and its emergence was at around 11,000 years ago. The remaining of the Old World OPXV emerged about 6,000 years ago. Then, ECTV, Abatino and CPXV-GerMKY2010 clade diverged from other OPXV, and their estimated time to the most recent common ancestor (tMRCA) was approximately 5,000 years ago. Later CPXV-like 2 segregated from other OPXV approximately 5,400 years ago. The tMRCA of MPXV, VACV and VACV-like CPXV was estimated as 3,500 years ago. MPXV originated approximately 600 years ago, ~1444 AD<sup>307</sup>. However, a more recent study suggested that MPXV emerged in 1970 AD <sup>310</sup>, although this estimation is later than the date of the first MPXV isolation <sup>159</sup>. CPXVlike1 diverged from VARV, TATV, CMLV and VARV-like CPXV about 3,700 years ago. VARV originated approximately 1,746 years ago <sup>307</sup>. Although a recent study reported that VARV has emerged 4,000 years ago, which is consistent with the records of smallpox in Egyptian mummies <sup>311</sup>.

## 1.7 Hazard characterization of Modified Vaccinia virus Ankara

Recombinant viral vector vaccines, such as recombinant MVA, are considered as genetically modified organisms (GMO). In the European Union (EU), the marketing authorization of recombinant vaccines are subject to additional requirements compared to non-recombinant vaccines, which are stipulated in Directive 2001/18/EC <sup>312</sup>. The directive seeks to protect human health and the environment when a GMO is placed on the market and released into the environment by requiring an Environmental risk assessment (ERA) for the approval of the recombinant vaccine. The purpose of the ERA is to assess potential risks to human health and the environment that may arise from the use and release of GMOs into environment. The ERA consists of six steps: hazard identification, hazard characterization, evaluation of the likelihood of the hazard, risk characterization, proposal of risk management strategies and determination of overall risk conclusion <sup>312</sup>. Step 2 (hazard characterization) consists of the evaluation of the

potential consequences of each possible adverse effect of a GMO on human health and the environment.

Despite the strong safety profile of MVA, there are still some knowledge gaps regarding MVA and MVA vectored vaccines such as recombination of MVA vectored vaccines with naturally circulating OPXV, nature and distribution of naturally occurring OPXV, the molecular basis of MVA host range restriction as well as the genetic stability of MVA and MVA vectored vaccines <sup>133</sup>. Hence, addressing these knowledge gaps through carefully planned experiments in cell cultures and animal models is essential for the hazard characterization of MVA and MVA vectored vaccines. Therefore, it would contribute to achieving a more robust ERA and further optimizations of MVA as a safe vaccine vector <sup>133</sup>.

## 1.7.1 Host cell restriction of MVA

The host restriction range of MVA is one of the characteristics that make MVA a good candidate for the development of vaccines against infectious diseases. However, the genetic basis for MVA restriction is not completely elucidated. MVA has suffered six major deletions that may cause its restricted host range. However, the introduction of six major MVA deletions into CVA was not enough to recover the complete host range of MVA <sup>285</sup>. Similarly, the restoration of large deleted regions containing *K1L* and *C12L* did not restore wild type host range <sup>313</sup>, but improved the ability of MVA to multiply in human cells <sup>313</sup>. However, the introduction of the *C12L* gene rescued MVA multiplication in only human MRC-15 cells <sup>314</sup>. Additionally, the insertion of *K1L* in MVA did not restore the capacity to productively grow in human cells <sup>121,313,315</sup>, but restored the multiplication of MVA in rabbit RK13 cells <sup>315</sup>.

Another host range gene that plays a role in multiplication of MVA in human cells is  $C16L_{\pi}$ The repair of both the C16L and C12L genes rescued the ability of MVA to multiply in human cell lines (HeLa, 293T, A549 and MRC-5 cells)<sup>316</sup>. Although the insertion of both genes, unlike the introduction of only C16, did not enhance the multiplication of MVA in monkey BS-C-1 cells <sup>316</sup>. Nevertheless, the multiplication competent VACV-WR lacked the C16L gene, which suggested that it contained another gene with redundant function <sup>316,317</sup>. Yet, the role of the major deletions and small mutations in the host range defect of MVA it is still unclear.

A study by Erez *et al.* has shown that spontaneous single mutations altered the host range of MVA. These single mutations in the *D10L* gene arose during passaging of MVA in BS-C-1 cells and increased multiplication of MVA in monkey BS-C-1 cells and slightly in human cells <sup>318</sup>. Even though the *D10L* gene has never been associated with the host range. Another study demonstrated that it is possible to re-adapt MVA to human Caco2-cells by serial passages in Caco2-cells. MVA variants were able to undergo productive infection in human Caco2-cells <sup>133</sup>. These studies indicate that host defect of MVA could be reversible and the host range restriction of MVA might not be a stable feature <sup>318</sup>. Alternatively, most MVA strains may be polyclonal containing many variants and adaption in human and mammalian cells through serial

passages might have selected a variant with enhanced fitness and multiplication abilities in human cells.

## **1.7.2** Nature and distribution of naturally circulating orthopoxviruses

For the hazard characterization of the MVA and MVA vectored vaccines, it is necessary to have information about the nature and distribution of naturally occurring OPXV in the area where the recombinant vaccine is to be deployed due to potential recombination of MVA vectored vaccines with a multiplication competent OPXV, which may lead to restoration of MVA to wild type and transfer of the transgene into a competent OPXV <sup>133</sup>.

Despite the relevance of OPXV, there is still lack of information regarding the natural reservoir, host range and geographic distribution of some OPXV<sup>184,319</sup>. The surveillance efforts and isolation of OPXV both in humans and animals are limited, except for a few countries <sup>133</sup>. In addition, many places where OPXV are endemic lack infrastructure and resources. Most information about OPXV has been collected after outbreaks, for instance, the current global Mpox outbreak. Thus, known OPXV are not a representation of what is in nature because most OPXV strains were isolated from humans and from a few places. The lack of information about the nature, distribution and evolution of OPXV hinders the prediction of emergence OPXV <sup>319</sup>.

Moreover, there is also lack of information about the consequences of the possible adverse effects after releasing the OPXV vectored vaccines. There is no monitoring of the adverse effects associated with the interaction of the recombinant vaccine and naturally occurring OPXV. One example is the recombinant vaccinia-rabies vaccine (Raboral-VRG) used in foxes <sup>320</sup>. It has been monitored for efficacy of vaccination but not for the interaction of the vaccine with the wild OPXV in foxes as well as its possible adverse effects <sup>321</sup>. It is important to establish monitoring plans in place prior to releasing the recombinant vaccines as, for example, the spillover from vaccinated animals to the environment could cause changes in the diversity of the wild OPXVs.

It is difficult to make inference about adverse effects due to the interaction of OPXV vectored vaccines and the wild type OPXV when there is few or lack of information about the nature and distribution of naturally occurring OPXV before and after the release of OPXV vectored vaccines. Those are knowledge gaps in the hazard characterization of MVA vectored vaccines <sup>133</sup>.

## **1.7.3** Recombination in co-infection and superinfection

The recombination between MVA vectored vaccines and naturally occurring OPXV could result in the restoration of MVA to wild type (due to the rescue of deleted and fragmented genes), the transfer of the transgene into a naturally occurring OPXV and the generation of progeny viruses with altered properties (such as virulence and host range) <sup>133,322</sup>. The information about the potential for recombination between OPXV vectored vaccines and naturally occurring OPXV are not mandatory in the ERA <sup>133</sup>. Even though the genetic transfer

could be a consequence of recombination and it is stipulated in the Directive 2001/18/EC as an indirect effect.

There is dearth of information about the potential for recombination between the poxvirus vectored vaccines and naturally occurring OPXV as well as its consequences. The recombination events between MVA vectored vaccines and naturally occurring OPXV are considered negligible because (1) the co-localization of the viruses in the same cell is unlikely, (2) MVA lost the ability to produce infectious virions in human and most mammalian cells, (3) OPXV are short-lived and (4) superinfection exclusion prevents the second infection of infected cells <sup>323</sup>. However, the likelihood of co-localization increases when there are OPXV circulating in the area of administration of MVA and when the vaccines are administrated to domesticated animals and wildlife since animals are the reservoirs and accidental hosts of natural OPXV <sup>133,322</sup>. Even the ongoing global Mpox outbreak would create scenarios for the interaction of MVA and zoonotic OPXV in humans due to the extensive use of MVA vaccines. Despite the short-lived of OPXV, DNAemia of CPXV can last until four weeks <sup>324</sup>, which is a lapse of time for virus-virus interactions <sup>133</sup>. Even though MVA is unable to complete the viral cycle in nonpermissive cells, the infection is blocked on the morphogenesis, thereby the viral DNA replication is unimpaired <sup>119</sup>. Hence, the recombination could take place in non-permissive cells because only 12 bp of overlapping homologous sequences in DNA sequences are sufficient for recombination <sup>325</sup>. In case of superinfections, the mechanisms of superinfection exclusion are not absolute as few viral cores of the superinfecting virions were observed in the cytoplasm of superinfected cells <sup>218</sup>.

A study of *in vitro* co-infection with MVA vectored vaccines and naturally occurring OPXV showed that the viruses underwent recombination <sup>326</sup>. The co-infection was performed in permissive BHK-21 cells. The recombination resulted in hybrid viruses that displayed parental and non-parental characteristics <sup>326,327</sup>. The genomic characterization of these progeny viruses would give a better understanding of the recombination between these viruses.

Evidence for the natural recombination between a wild strain of capripoxvirus and a live attenuated vaccine in Russia has been reported <sup>328</sup>. The recombinant vaccine-like lumpy skin disease virus (LSDV) might be the result of the recombination between field LSDV strain and LSD vaccine. It was isolated after the introduction of the vaccine. The next outbreaks were caused by vaccine-like LSDV strains and not by wild LSDV strains that were observed in the previous years before the vaccination campaigns <sup>329,330</sup>. Although it has been suggested that the recombinant vaccine-like LSDV strains could be a spillover from vaccinated animals <sup>331</sup>.

Despite of the relevance of the recombination between OPXV vaccines or OPXV vectored vaccine and naturally circulating OPXV, the studies about this topic are scarce. Therefore, more studies examining recombination should be performed to obtain data about the potential hazard arising from recombination between MVA vectored vaccine and naturally occurring OPXV. Furthermore, the biological and genetic characterization of recombinant progeny viruses should

be performed to understand the recombination process, poxvirus host range, cytopathogenicity and transgene stability and integrity.

## 1.7.4 Homogeneity and genetic stability of MVA

The homogeneity and the genetic stability of OPXV vectored vaccines are the major concerns during the production of vaccines in large-scale. It is deemed that MVA was homogenous and stable after 570 passages in CEF and plaque purified <sup>332</sup>. Comparison of the genome sequence of five MVA strains showed that their genomes (excluding the ITR) were similar <sup>333</sup>. Another study showed that the genomes of three MVA strains were genetically identical, but the strains showed different phenotypic properties and safety profiles. The method employed in that study did not detect the variants in the MVA strains (which were polyclonal mixtures of viruses) because the method only evaluated the majority of viral genome in the sample <sup>132</sup>. In order to identify variants in the MVA strains and confirm the homogeneity, the strains should be subjected to deep sequencing <sup>133</sup>.

The genetic instability could occur within and outside the transgene. One of the desirable characteristics for a virus to be used as recombinant vector vaccines is to be genetically stable. It has been observed that the MVA genome suffers spontaneous mutations during serial passages <sup>318,334</sup> and, hence, some variants could be raised during the production of the vaccine or recombinant vaccine stocks. The stability and integrity of the transgene is particular important in the development of recombinant viral vaccines to avoid losing or reducing expression of the transgene. Thus, understanding the viral and host determinants involved in the genetic instability will facility the development of MVA vectored vaccines.

Some studies have showed instability of the transgene in recombinant MVA vaccines <sup>335–338</sup>. A study by Wyatt *et al.* showed that the transgene expression changed during serial passages due to spontaneous mutations <sup>338</sup>. The mutations were found inside and outside the transgene <sup>338</sup>. The transgene stability of MVA-HANP has been examined in permissive IEC-6 cells. The expression of the transgene was unstable, after the third passage the expression was undetectable <sup>327</sup>. Similarly, it has been observed in the hybrid progeny viruses obtained from co-infection *in vitro* with MVA-HANP and a wild type CPXV. One hybrid virus completely lost the transgene expression after the third or fourth passage. Whereas the stability of transgene of other hybrid progeny viruses varied across different cell lines <sup>326,327</sup>. From a biosafety point of view the loss of the transgene is relevant because the transgene serves as a tool to monitor the spread of the recombinant vaccine to target and non-target organisms as well as its non-target effects.

In order to confirm the genome stability of recombinant MVA vaccine, it has been recommended to perform the genome sequencing of master seed virus for up to five passages <sup>133</sup>. In the ERA it is required to assess the adverse effects caused by the genetic stability but it is not mandatory to provide that information as well as whole genome sequences of the stocks to confirm homogeneity <sup>133</sup>.

## 2. RATIONALE OF THIS STUDY

OPXV based vaccines, especially MVA, are being used as recombinant vector vaccine against infectious diseases and neoplasm in humans and animals. OPXV vectored vaccines are also being developed against well-known and emerging human diseases caused by viruses such as HIV, influenza virus, Ebola virus, Zika virus, respiratory syncytial virus and SARS-coranovirus-2. Moreover, oncolytic chimeric OPXV are in clinical trials for the treatment of cancer. It is worth considering some biosafety issues that may arise if OPXV vaccines or OPXV vectored vaccines are deployed extensively in the treatment of infectious diseases and cancers. MVA is considered an attractive vector for vaccination due to its host range restriction in human and mammalian cell lines. During the attenuation process MVA lost some virulence genes-However, various mammalian cells, even human cells, are still permissive and semi-permissive to MVA infection.

There are still knowledge gaps with respect to the hazard characterization of MVA. One of the biosafety concerns about the use of MVA vectored vaccine is the potential for recombination between MVA vectored vaccine and a naturally occurring OPXV in cells/hosts in which it multiplies poorly (semi-permissive/non-permissive cells). The recombination with multiplication competent OPXV during co-infection and superinfection may lead the rescue of deleted and/or truncated host range genes in MVA and, therefore, restore the ability to multiply efficiently in human and mammalian cells. The hybrid progenies could display higher virulence and non-parental characteristics, lose the transgene (which hinders the monitoring of OPXV vectored vaccine) and/or transfer the transgene to a multiplication competent OPXV.

*In vitro* studies on recombination between OPXV vectored vaccine and wild type OPXV are scarce because the risk of recombination has been considered negligible. This argument is based on MVA host restriction and superinfection exclusion. Nevertheless, viral DNA replication still occurs in non-permissive cells which is enough for recombination to take place. Therefore, studies of recombination *in vitro* between MVA vectored vaccine and natural circulating OPXV in semi-permissive cells during co-infection and superinfection should be performed. These studies are relevant to hazard characterization of MVA vectored vaccines.

There are putative scenarios where recombination between OPXV vectored vaccines and other OPXV such as post-exposure therapies of MVA to treat pre-existing OPXV infection in animals or humans can occur. A robust characterization of the potential for recombination between MVA vectored vaccines and naturally occurring OPXVs will require knowledge of the genetic diversity and evolution of naturally circulating OPXVs in regions in which the vaccine will be released since endemic OPXVs will serve as parental strains for recombination. Natural infection with an OPXV (for example MPXV) and vaccination with MVA vaccine (for example JYNEOUS) or prophylactic vaccination with MVA vaccine and natural infection with OPXV are plausible scenarios for co-infection and superinfection which may result in recombination. The surveillance and characterization of OPXV are limited, except for MPXV whose surveillance has increased recently due to the current global outbreak in several non-endemic
countries. OPXV circulated on every continent except Antarctica. For instance, CPXV is endemic to Eurasia. CPXV is a peculiar species among OPXV because it is genetically diverse and polyphyletic. It contains almost the full set of OPXV genes. Moreover, there is evidence of natural recombination in CPXV and between CPXV and other OPXV. The genomic characterization of CPXV isolates would provide insights into OPXV evolution, phylogeny and phylodynamic. Experimental *in vitro* co-infection and superinfection of cell cultures with naturally occurring CPXV and MVA vectored vaccine will serve as a model in which the potential for recombination and genome wide pattern of recombination will be explored. Taken together, the study of the diversity and evolution of OPXV circulating in the location of in which MVA vaccines may be released should be investigated because they are the baseline data to evaluate the potential for recombination and interrogate the genetic heterogeneity of CPXV.

# **3. GENERAL OBJECTIVE**

The main objective of this thesis is to study the evolution and the genetic diversity of CPXV and examine recombination *in vitro* between a naturally occurring CPXV and MVA vectored vaccine in cells that MVA multiplies poorly. Thus, this study is aimed at improving OPXV vectored vaccine biosafety through genomic characterization of wild type CPXV and CPXV/MVA progeny viruses.

## PAPER I

*Hypothesis*: Recombinant CPXV viruses are circulating in nature.

#### Specific objectives:

- To perform genomic characterization of a novel human CPXV.
- To detect potential recombination events in the genome of novel human CPXV.
- To determine the phylogenetic relationship of a novel human CPXV with other representative CPXV and OPXV strains.

#### PAPER II

Hypothesis: CPXV isolates have high genetic diversity and CPXV is not a single species.

#### Specific objectives:

- To determine the phylogenetic relationship of the Fennoscandian CPXV isolates with other representative CPXV and OPXV strains.
- To evaluate the genetic diversity in CPXV isolates
- To study the evolutionary history of CPXV.

#### PAPER III

*Hypothesis:* Recombination between MVA-HANP and a naturally occurring CPXV during coinfection and superinfection of cells (in which MVA multiplies poorly) leads the generation of progeny virus with novel genetic and biological characteristics.

#### Specific objectives:

- To examine the recombination *in vitro* MVA-HANP and naturally occurring Norwegian feline CPXV during co-infection and superinfection of semi-permissive Vero cells.
- To perform genome characterization of parental MVA-HANP and progeny viruses.

## 4. METHODOLOGY

#### 4.1 Viruses, cells, co-infection and superinfection experiments

In **paper I**, we used the naturally occurring Norwegian human CPXV-No-H2 to examine the possibility of natural recombination in circulating Fennoscandian CPXV and map genome-wide recombination events. Evidence of natural recombination in CPXV-No-H2 based on limited genetic characterization was previously demonstrated <sup>71</sup>. CPXV was propagated in African green monkey kidney Vero cells because these cells are fully permissive to CPXV infection <sup>121,124,284–287,327</sup> (**paper I and II**).

In **paper II**, we characterized five naturally circulating CPXV strains (CPXV-No-H1, CPXV-No-F1, CPXV-No-F2, CPXV-Swe-H1 and CPXV-Swe-H2) that were isolated in the Fennoscandian region (Norway and Sweden) from human and felines <sup>45,68–71</sup>. Genome sequencing of these Fennoscandian CPXV, and phylogenomic analysis with other OPXV strains would contribute to the understanding of the diversity, phylogenetic relationship of CPXV and other OPXV and evolutionary history of CPXV.

In **paper III**, we evaluated the recombination between CPXV-No-F1 and MVA-HANP during *in vitro* co-infection and superinfection of semi-permissive cells to MVA-HANP. Vero cells were selected for these experiments because they are semi-permissive to MVA-HANP infection <sup>287</sup>. The feline isolate CPXV-No-F1 was selected instead of the human isolate CPXV-No-H1 because a possible scenario of human CPXV infection is by direct contact with infected domestic pets like cats. In addition, this is also a naturally occurring Fennoscandian CPXV.

MVA-HANP was previously chosen as a OPXV vectored vaccine since (1) MVA is used as smallpox vaccine and viral vector vaccine, (2) MVA is a multiplication incompetent poxvirus vector, and (3) MVA-HANP contains the influenza virus *hemagglutinin* (*HA*; A/PR/8/34) and *nucleoprotein* (*NP*) gene inserts, which makes it easier to monitor the transgenes by immunostaining. Overall, this is a safe model to test recombination *in vitro*.

The selection of the progeny viruses was in Vero cells. Unlike CPXV, MVA does not form plaques in Vero cells but expresses HA <sup>326</sup>, which facilitates the identification (and selection) of the plaques from hybrid viruses and differentiate them from parental virus plaques by plaque phenotype and the HA expression. Two criteria used to select the progeny viruses were: plaque phenotype and the expression of the influenza virus HA protein.

The co-infection and superinfection experiments were done at a multiplicity of infection (moi) of 5.0 for each parental virus. Although the high moi of 5 might not be reflect the moi. under natural co-infection/superinfection, it assures the infection of all the cells in the primary infection and, therefore, guarantee the superinfection of Vero cells. Additionally, we performed different superinfection experiments: (1) primary infection with CPXV-No-F1 and superinfection with MVA-HANP after 4 hrs post primary infection (ppi), (2) primary infection with CPXV-No-F1 and superinfection with MVA-HANP after 6 hrs ppi, (3) primary infection

with MVA-HANP and superinfection with CPXV-No-F1 after 4 hrs ppi and (4) primary infection with MVA-HANP and superinfection with CPXV-No-F1 after 6 hrs ppi (Figure 4). These experiments would simulate different possible scenarios such as (1) the person/animal is infected with CPXV and receives the vaccine (MVA) and (2) when the person/animal received the vaccine (MVA) and then is infected with CPXV. The least possible scenario would be the co-infection when the person is infected by both viruses at the same time. But these experiments constitute cell culture-based models to examine recombination of MVA with other OPXV during co-infection of semi-permissive cells as well as evaluate the possibility of superinfection exclusion in preventing recombination.



**Figure 4.** Co-infection and superinfection experiments in Vero cells. Co-infection, Vero cells were co-infected with CPXV-No-F1 and MVA-HANP. Superinfection 1, primary infection with CPXV-No-F1 and secondary infection with MVA-HANP at 4h post primary infection (ppi); Superinfection 2, primary infection with MVA-HANP and secondary infection with CPXV-No-F1 at 4h ppi; Superinfection 3, primary infection with CPXV-No-F1 and secondary infection with MVA-HANP at 6h ppi; Superinfection 4, primary infection with MVA-HANP and secondary infection with CPXV-No-F1 at 6h ppi.

## 4.2 Viral DNA extraction

The six CPXV isolates were semi-purified by sucrose gradient as previously described <sup>209</sup>. Viral DNA was extracted from Vero cells infected with the semi-purified virions (**paper I & II**). MVA-HANP was also semi-purified by sucrose gradient, but viral DNA was extracted from infected BKH-21 cells (**paper III**). The progeny viruses from co-infected and superinfected Vero cells were plaque purified and viral DNA was extracted from Vero cells infected with the plaque purified viruses (**paper III**).

The viral DNA extraction was performed following Dabrowski's protocol <sup>76</sup>. In order to release the viral particles, the infected cells were incubated on ice in cold hypertonic buffer (with Triton X-100 and  $\beta$ -mercaptoethanol) to solubilize the plasma membranes. The cell nuclei were removed from cytoplasmatic content by centrifugation. Then, the viral particles were isolated from the cytoplasmatic content by ultracentrifugation. The viral particles were incubated in cold hypotonic buffer to release viral core. For the following steps, we used a commercial kit for viral DNA extraction (and Qiagen Genomic DNA buffers). These kits have the advantages of extracting high-molecular weight DNA and yielding pure DNA of good quality. Moreover, reproducible DNA yield and quality is achieved.

## 4.3 Sequencing

Some sequencing technologies can be used for whole genome sequencing. These technologies are second generation sequencing (or next-generation sequencing, NGS) and third generation sequencing (TGS). NGS produces large amounts of short reads (up to a few hundred bp) with low error rate  $^{339,340}$ . One disadvantage of NGS is that the short reads are not suitable for assembling genomes with long repeated regions and large structural variants  $^{341}$ . In contrast to NGS, TGS yields much longer reads (>10 kbp), but with high error rate (~15%)  $^{340-342}$ . The long reads are useful for *de novo* genome assembly. Both NGS and TGS have advantages and disadvantages; however, one technology overcomes the disadvantages of the other. The hybrid sequencing, that is combination of NGS (short-read sequencing) and TGS (long-read sequencing) platforms, resolves problems such as repetitive regions (e.g. ITR), deletions/insertions and produces genome assemblies with few or no gaps.

Whole genome sequencing of Fennoscandian CPXV isolates (**paper I and II**), MVA-HANP and the progeny viruses from co-infected and superinfected Vero cells (**paper III**) was performed using the hybrid sequencing approach. For this approach, we used Illumina Miseq platform for short-read sequencing (NGS) and Nanopore platform for long-read sequencing (TGS). Illumina MiSeq is suitable to sequence small genomes (like viral genomes) and generates up to 15 Gb of output and paired-end reads of 300 bp. Nanopore is more cost-effective for generating long reads <sup>341,342</sup>.

#### 4.4 Genome assembling and annotation

The raw Illumina reads were pre-processed before genome assembling (**paper I, II and III**). The adapters, the low quality reads and short reads were trimmed using Trimmomatic <sup>343</sup>. It has been shown that read trimming increases the quality and reliability of downstream analysis and reduces computational requirements and execution time <sup>344</sup>. After trimming, the reads from contaminants (e.g. Vero cells) were removed using FastQ Screen v0.14.1 <sup>345</sup> with BWA aligner <sup>346,347</sup>. The reads were mapped to the possible contaminant genomes (Vero cells) and filtered. FastQ Screen v0.14.1 is a program that maps sequencing reads to one or more reference genomes (e.g. host cell, CPXV and MVA) using an aligner (e.g. BWA) and filters the reads mapping (or not mapping). <sup>345</sup>. Furthermore, the program allows you to create your own database with the genome of our interest and choose between three aligners. BWA was chosen because it is designed for aligning short and long reads <sup>346,347</sup>.

The processed reads were used to assemble the viral genomes. The approach used in **paper I**, **II and III** was hybrid genome assembly (Nanopore and Illumina data) due to the structure of the OPXV genomes. These genomes contain repetitive regions and ITR that hinder the assembly with only Illumina data (short reads). The long reads from Nanopore sequencing overcome this problem. Different assemblers are available for hybrid genome assembly, such as SPAdes <sup>348</sup>, PBcR <sup>349</sup>, Unicycler <sup>350</sup> and MaSurCa <sup>351</sup>. The viral genomes were assembled using hybridSPAdes. The algorithm first assembles the short reads and then aligns the long reads to generate longer contigs, and generates accurate assemblies <sup>348</sup>. Unlike PBcR and MaSurCa, it has been designed to assemble small genomes (e.g. bacterial and viral genomes) <sup>352</sup>.

The assembled genomes were annotated using Genome Annotation Transfer Utility (GATU) (**paper I, II and III**). GATU is a rapid annotation tool with a user-friendly graphical user interface. It transfers annotations from an annotated reference genome to the target genome, which makes the annotation process less time-consuming and less tedious. Additionally, it allows you to review the alignments of putative open reading frames (ORF) with the reference genes <sup>353</sup>.

#### 4.5 Gene content comparison

In **paper I**, we compared the gene content of CPXV-No-H2 with other poxvirus genomes. Previously evidence of recombination was detected in CPXV-No-H2<sup>71</sup>. First, all predicted CPXV-NoH2 coding sequences (CDS) were translated and compared to the proteins of three OPXV reference genomes (ECTV-Moss, CPXV-BR and VACV-Cop) by BLASTP<sup>354</sup>. Some regions of the CPXV-No-H2 genome were more similar to either CPXV, ECTV or VACV, but others were less similar to the three OPXV. Hence, in order to detect CPXV-No-H2 genes more similar to other poxvirus genes, all predicted CPXV-NoH2 CDS were translated and compared to poxvirus proteins by BLASTP. The predicted CPXV-No-H2 genes that encode proteins with the highest amino acid similarity to other OPXV proteins than CPXV proteins were compared to the OPXV genomes by BLASTn.

In **paper II**, we performed the gene content comparison of the five Fennoscandian CPXV with the reference genome CPXV-Br. Similar to procedure of **paper I**, the predicted CDS from five CPXV isolates were extracted, translated into amino acid sequences and compared to the CPXV-Br proteins using BLASTp <sup>354</sup>.

## 4.6 Recombination analysis

Since it was suggested that CPXV-No-H2 might originate from a recombination between CPXV-like virus and ECTV-like virus <sup>71</sup>, we performed the detection of the possible recombination events in the CPXV-No-H2 genome using RDP4 <sup>355</sup> and Simplot <sup>356</sup> (**paper I**). These programs have been widely used in other studies <sup>6,71,357,358</sup>. These programs required as input file the alignment of the recombinant sequence with the putative parental sequences. The CPXV-No-H2 genome with other genomes were aligned using Multiple Alignment Fast Fourier Transform (MAFFT). Compared to other aligners, MAFFT is a faster aligner and provides reliable and accurate multiple sequence alignments <sup>359</sup>.

RDP4 is a recombination detection program that has implemented several methods (RDP <sup>360</sup>, bootscan <sup>361</sup>, maxchi <sup>362</sup>, chimaera <sup>363</sup>, 3seq <sup>364</sup>, geneconv <sup>365</sup>, lard <sup>366</sup>, and siscan <sup>367</sup> to detect potential recombination events in the aligned sequences. It allows to analyse up to 2500 sequences of 10,000 kbp, which makes it suitable for our dataset (genome length < 225 kbp). Furthermore, RDP4 provides the recombination sequences, the sequences that are closely related to the minor and major parental and recombination breakpoints (the beginning and end breakpoints of the potential recombinant sequences) <sup>355</sup>.

Simplot is another program to detect potential recombination. This software calculates the percent identity (similarity) of the query sequence compared to the other sequences and generates similarity plots (% similarity versus position). The potential recombination breakpoints are easily identified and visualized on the similarity plots. <sup>356</sup>. Compared to RDP4, Simplot provides fast results, but only allows to analyse up to 10 sequences. Besides the identification of the potential recombinant regions in CPXV-No-H2, we generated phylogenetic trees based on potential CPXV-No-H2 recombinant regions to corroborate the phylogenetic relationship between the putative parental virus (where the recombinant sequence was derived) and CPXV-No-H2. In **paper III**, we conducted recombination analysis of the progeny viruses from co-infected and superinfected Vero cells using the same methodology described above.

### 4.7 Phylogenetic analysis, patristic and genetic distances

The phylogenetic relationship of Fennoscandian CPXV strains with other CPXV and OPXV was investigated in **paper I and II**. The majority of the OPXV genomes used in this thesis were retrieved from the Viral Orthologous Clusters database (VOCs) <sup>368</sup> (**paper I and II**). VOCs is

a repository for large dsDNA viruses, including complete and fully annotated poxvirus genomes <sup>369</sup>.

In **paper I and II**, three different alignments were used for the phylogenetic analysis: (1) OPXV core genome (the genomes without ITR), (2) OPXV whole genome (genomic region from the first gene until the last gene), and (3) OPXV orthologous genes. DNA sequences were aligned using MAFFT <sup>370</sup>. After aligning, the poorly aligned positions and gaps were removed from the whole and core genome alignments using Gblocks <sup>371</sup>. It is recommended to remove the problematic alignment regions in long alignments but not in short alignments (as orthologous gene alignment) to generate accurate phylogenetic trees <sup>371</sup>. The orthologous genes in OPXV genomes were identified using OrthoFinder <sup>372</sup>. OrthoFinder is fast, accurate and simple to use. It finds orthogroups, orthologs and gene duplication events and provides comparative genomics statistics <sup>372</sup>. The orthologs (present in ≥95% of the genomes) were aligned and concatenated.

Two methods of tree reconstruction were used for phylogenetic analysis: maximum likelihood (ML) and Bayesian inference (BI) method. These methods are more efficient than the neighbour joining method in obtaining accurate tree <sup>373,374</sup>. Although they are computationally expensive <sup>375</sup>. Before generating the phylogenetic trees, the best-fit models of DNA substitution for the datasets were selected because ML and BI methods use an explicit DNA substitution model. The models were selected by modelTest-NG <sup>376</sup>. ML analyses were performed using RAxML <sup>377</sup> and BI analyses were performed using MrBayes v.3.2.7 <sup>378</sup>.

Recombination events within datasets may cause inconsistencies in the phylogenetic trees and, therefore, erroneous phylogenetic inferences <sup>379,380</sup>. In order to assess if recombination in three datasets affects the phylogenetic inferences between CPXV and OPXV in **paper II**, the three datasets were analyzed for recombination events using RDP4 and one additional dataset of 62 non-recombinant OPXV conserved genes was included. OPXV conserved genes were examined for recombination using RDP4 and only conserved genes that did not show recombination were selected. In addition, in **paper II** the phylogenetic signal of the four dataset was assessed by likelihood mapping analysis using IQ-TREE <sup>381</sup>. It is important to test the presence of phylogenetic signal because the lack of it can affect the reliability of the results <sup>382</sup>.

The diversity of CPXV has been reported and it was proposed that CPXV might be more than one species <sup>72,73,75,76,307</sup>. Hence, in **paper II**, we used the genetic and patristic distances between and within CPXV clusters to demonstrate the genetic diversity among CPXV isolates. To separate CPXV isolates into sub-species, the genetic and patristic distances between the closest and distinct OPXV species (TATV and CMLV) were used as threshold values. The patristic and genetic distances were estimated using the program Patristic <sup>383</sup> and p-distances method, respectively.

#### 4.8 Phylodynamic evolutionary analysis of CPXV

The molecular evolution of CPXV was reconstructed using 62 non-recombinant conserved genes of 55 CPXV (**paper II**). Different methods can be used to date the phylogeny: Bayesian <sup>384</sup>, ML <sup>385</sup> or least-squares dating <sup>386</sup>. We used the Bayesian Markov chain Monte Carlo (MCMC) inference method implemented in *BEAST* <sup>387</sup>. Before carrying out the phylodynamic evolutionary analysis, we performed some preliminary analyses on the dataset. First, we checked the presence of phylogenetic signal in the dataset by IQtree <sup>381</sup>. Second, the conserved genes were examined for recombination by RPD4 <sup>355</sup>. Only conserved genes that did not show recombination were selected. Third, we assessed the temporal signal in the dataset using TempEst <sup>388</sup> because a dataset without temporal signal is not appropriate to calibrate a molecular clock and to infer evolutionary rate and time scale of the virus <sup>382</sup>. TempEst allows you to detect problematic sequences, for example sequences with assembly errors, annotation errors or incorrect sampling dates <sup>388</sup>.

# 5. SUMMARY OF THE MAIN RESULTS

# Paper I: "Genomic sequencing and analysis of a novel human *Cowpox virus* with mosaic sequences from North America and Old World orthopoxvirus"

- We presented the whole genome sequence of a human cowpox virus, CPXV-No-H2, from Norway. The length of the CPXV-No-H2 genome was 220,276 bp, containing 217 predicted genes.
- Among 217 predicted genes of CPXV-No-H2, seventeen encoded proteins were most similar to OPXV proteins from the Old World (ECTV and VACV), and North America (AKPV).
- Our analyses revealed that CPXV-No-H2 was a mosaic genome with genes most similar to other OPXV genes.
- The recombination analysis revealed that CPXV-No-H2 may have arisen out of several recombination events between OPXVs.
- One potential recombinant event with parental AKPV contained the *NoH2-210* gene that was most similar to *AKPV-203* and Murmansk gene.
- Within the seven putative recombinant regions in CPXV-No-H2, one was located in the conserved central genomic region.
- The phylogenetic analysis showed that CPXV-No-H2 with two German CPXV isolates (CPXV\_GerMygEK938\_17 and CPXV\_Ger2010\_MKY) formed a separate, new CPXV clade, which we named "ECTV-Abatino-like CPXV".
- CPXV\_GerMygEK938\_17 and CPXV\_Ger2010\_MKY shared 96.4% and 96.3% nucleotide identity with CPXV-No-H2, respectively.

#### Paper II: "Genomic Sequencing and Phylogenomics of Cowpox Virus"

- We reported the complete sequence of five Fennoscandian CPXV isolated from cats and humans.
- Their genome size ranged from 220-222 kbp, containing between 215 and 219 predicted CDS.
- The phylogenetic analysis based on the whole genomes, core genomes, orthologous genes and 62 non-recombinant conserved genes of 87 OPXV isolates (including the five Fennoscandian CPXV isolates) confirmed the separation of CPXV isolates into at least five distinct major clusters (CPXV-like 1, CPXV-like 2, VACV-like CPXV, VARV-like CPXV and ECTV-Abatino-like CPXV).
- CPXV strains were closely related to other the Old World OPXV, except for AKMV.
- Based on phylogenetic analysis and the genetic and patristic distances, CPXV isolates can be further divided into eighteen sub-species.
- We reconstructed the evolutionary history of CPXV using Bayesian time-scaled phylogeny of CPXV based on the concatenated 62 non-recombinant conserved genes of 55 CPXV. However, the emergence date of CPXV as well as CPXV clusters could not be accurately estimated.

• The mean evolution rate of CPXV was calculated to be  $1.65 \times 10^{-5}$  subs/site/year, with 95% high posterior density interval (HPD) of  $4.36 \times 10^{-7} - 4.32 \times 10^{-5}$  subs/site/year.

#### Paper III: "Whole genome sequencing of recombinant viruses obtained from co-infection and superinfection of Vero cells with Modified Vaccinia virus Ankara vectored influenza vaccine and naturally occurring *Cowpox virus*"

- Recombination occurred between CPXV and MVA-HANP in co-infected and superinfected Vero cells.
- Some progeny viruses displayed plaque phenotype distinct of that of the parental viruses.
- The distribution of the recombinant events along the progeny virus genomes was random.
- The recombination events were located in both the conserved central region and the variable terminal regions.
- The transgene expression cassette was inserted (recombined) in the same position in the progeny virus genomes.
- The genomes of the recombinant progeny viruses have different lengths.
- Most recombinant progeny virus genomes were a mosaic of the two parental viruses (CPXV-No-F1 and MVA-HANP).
- The percentage of DNA derived from the parental viruses in the recombinant progeny viruses was variable.
- The recombinant viruses, more similar to MVA-HANP (>50%), rescued deleted and/or fragmented genes in MVA and gained new host ranges genes.
- Some recombinant progeny viruses carried the double expression cassette (harboring both influenza virus *HA* and *NP* transgenes) from MVA-HANP.
- The transgene of MVA-HANP was unstable, which led to the partially deletion of the double expression cassette.
- Resulting of the transgene instability of MVA-HANP one non-*HA*-transgene expressing progeny virus contained a fraction of the transgene expression cassette similar to the incomplete MVA-HANP.
- The progeny viruses suffered other genetic changes, such as the large deletion of 16,761 bp in two recombinant progeny viruses.

## 6. GENERAL DISCUSSION

MVA is a promising vector vaccine candidate. It is in pre-clinical and clinical trial studies for different diseases, including cancer <sup>135,140,141,143,389</sup>. However, despite the several studies about MVA and MVA vectored vaccine, there are still knowledge gaps about its potential for recombination with wild type OPXV as well as the distribution, genetic diversity and evolution of naturally circulating OPXV in regions in which MVA or MVA vectored vaccine will be administrated. The occurrence of natural recombination between MVA or MVA vectored vaccine and wild-type OPXV needs favourable scenarios where both viruses are present, that is, in environments where OPXV are circulating and MVA or MVA vectored vaccine is being administrated. Eurasia is a good scenario for recombination of MVA with CPXV since the latter is endemic in this region <sup>31–37</sup>. Several CPXV outbreaks and human CPXV infections have been reported <sup>42,45,66,67,69,71,72</sup>. Furthermore, MVA-BN has been approved as a smallpox and Mpox vaccine in Europe. Hence, the genomic characterization of CPXV strains isolated from different geographic locations is important to elucidate the genetic diversity and evolution of CPXV. This information is the baseline for evaluate the potential for recombination of MVA or MVA or MVA vectored vaccine with wild type OPXV.

In **paper I & II**, we reported the whole genome sequencing of six Fennoscandian CPXV isolates (CPXV-No-F1, CPXV-No-F2, CPXV-No-H1, CPXV-No-H2, CPXV-Swe-H1 and CPXV-Swe-H2). These isolates were from Norway and Sweden. Among them, there was one atypical CPXV isolate (CPXV-No-H2). It was classified as CPXV based on the presence of ATI, the sequence and phylogenetic analysis of *HA* gene, *cytokine response modifier B* (*crmB*) gene, and *Chinese hamster ovary host range* (*CHOhr*) genes <sup>70,71</sup>. However, it was an atypical CPXV because of its ATI phenotype (V<sup>+/</sup>), presence of the ECTV *atip* gene and atypical CPXV *Hind III* restriction map <sup>70,71</sup>.

In paper I & II, we studied the phylogenetic relationship of Fennoscandian CPXV with other OPXV. Our phylogenetic analyses revealed that CPXV did not form a monophyletic clade and their isolates were clustered into five major clusters: CPXV-like 1, CPXV-like 2, VARV-like CPXV, VACV-like CPXV and new CPXV clade. CPXV isolates were closely related to all Old World OPXV species, except for AKMV. These findings are in agreement with other phylogenetic studies <sup>74,78,307</sup>. The new CPXV clade was composed of CPXV-No-H2 and two German CPXV isolates, CPXV\_GerMygEK938\_17 and CPXV\_Ger2010\_MKY. CPXV-No-H2 shared most similarity to CPXV GerMygEK 938 17. This new CPXV clade was closely related to ECTV and Abatino clade. Thus, we tentatively named this clade as "ECTV-Abatinolike CPXV". Previously it has been suggested that these two German CPXV isolates formed a new lineage (CPXV-like 3), but their phylogenetic relationship with ECTV and Abatino had a low bootstrap support <sup>78</sup>. A recently study showed that ECTV-Abatino-like CPXV did not cluster with ECTV and Abatino based on phylogenetic tree of conserved central region (F11L - A23R)<sup>74</sup>. In contrast, all our phylogenetic trees showed a closer phylogenetic relationship between ECTV-Abatino-like CPXV and ECTV/Abatino clade, regardless of the dataset used (OPXV whole- and core-genome, OPXV orthologous genes or 62 non-recombinant OPXV

conserved genes) (**paper I and II**). In addition, in our phylogenetic tree construction, we used both ML and BI methods which are more robust and accurate than the NJ method used by Bruneau *et al.* 2023<sup>74</sup>.

The Norwegian CPXV isolates grouped in separate CPXV clusters rather than clustering together (**paper I and II**). The Norwegian CPXV-No-H2 belonged to ECTV-Abatino-like CPXV, whereas the other Norwegian CPXV isolates clustered together in CPXV-like 2. Similarly, the Swedish CPXV isolates were grouped together in CPXV-like 2. These Norwegian and Sweden CPXV isolates were closely related to British and Danish isolates, respectively (**paper II**) The phylogenies generated in other studies also showed the close phylogenetic relationship of these Norwegian CPXV isolates with the British CPXV isolates  $^{73,75,77}$ .

Our findings in paper I and II revealed the genetic heterogeneity of CPXV isolates. Thus, in paper II, we examined the genetic diversity of CPXV using the genetic and patristic distances between and within CPXV clusters as previously reported <sup>72,73</sup>. Using the genetic and patristic distances between TATV and CMLV as a threshold value, the five CPXV clusters can be classified as five sub-species and even they can be further divided into 18 sub-species. This is in congruent with our phylogeny (paper II). The genetic diversity in CPXV could be attributed to recombination events in CPXV. It has been showed that some CPXV strains were mosaic genomes derived from different CPXV clades <sup>77</sup>. Even some studies suggested recombination between CPXV and other OPXV <sup>6,84,302</sup>. The reported genetic diversity of CPXV in paper II could not be a result of recombination events because we used a dataset of 62 non-recombinant OPXV conserved genes and despite the extensive recombination in the other three datasets, the phylogenies and genetic and patristic distances from the datasets with or without evidence of recombination were similar. This was surprisingly because recombination can lead to incongruences in the phylogeny and inaccurate phylogenetic inferences as has been observed in other studies <sup>379,380</sup>. Indeed, phylogenetic incongruency was observed when validating the recombinant regions singly in **paper I**. However, it appears that the phylogenetic signals of the recombinant regions were masked by signals from the larger, non-recombinant regions of the genome (paper II).

The definition of CPXV has been based on host specificity and two main criteria (ATI bodies and red hemorrhagic pocks on the CAM)<sup>79</sup>, which allowed that several viruses were classified under the CPXV name. <sup>80–83</sup>. Mauldin *et al.* questioned the classification of CPXV as a single species because CPXV did not meet one of ICTV requirement (monophyly) to be classified as a species <sup>73</sup>. Our data presented herein substantiated the genetic diversity between and within CPXV clusters (**paper II**), which has also been noted by other researchers. <sup>72,73,75–77,390</sup>. Additionally, we demonstrated that CPXV was a polyphyletic assemblage, and it could be split into 18 sub-species (**paper II**). Earlier studies also suggested the division of CPXV <sup>72,73,75</sup>. Therefore, the reclassification of CPXV should be considered.

Within the OPXV, CPXV has the largest genome, broadest host range and contains almost the full set of OPXV genes <sup>40,84,198,201</sup>. These characteristics have led to the suggestion that a CPXV-like virus was the ancestor of all Old World OPXV (except for AKMV) <sup>40,198,293,307</sup>. However, the evolution of the CPXV as well as OPXV is not clear. In order to understand the evolution of CPXV, in **paper II** we studied the evolutionary history of CPXV based on the concatenated 62 non-recombinant conserved genes. We calculated CPXV substitution rate and the 95% HPD of our estimate overlapped the reported substitution rate of *Chordopoxvirinae* and OPXV <sup>292–295</sup>. The emergence and divergence dates of CPXV could not be accurately estimated; the 95% HPD intervals of the emergence dates were quite broad. We presumed that it could be because of (1) the high heterogeneity of CPXV isolates and (2) the low genetic information due to restricted number of isolates in term of location, age and host. However, these findings might support the proposed idea that lineages of CPXV are highly divergent and a reclassification of CPXV is warranted.

As mentioned above, CPXV-No-H2 is an atypical CPXV isolate that contains an ECTV atip gene <sup>70,71</sup>. A previous study of our research group suggested that CPXV-No-H2 could have acquired ECTV-*atip* gene by recombination with ECTV or and ECTV-like virus <sup>71</sup>. In order to characterize recombination in CPXV-No-H2, in paper I we sequenced the whole genome of CPXV-No-H2. Our analysis revealed that CPXV-No-H2 had a mosaic genome, containing genomic sequences more similar to North America OPXV (i.e., AKPV) and the Old World OPXV (i.e. ECTV and VACV). CPXV-No-H2 contained nine recombinant regions that may be a result of different recombination events between the parentals of AKPV and CPXV, ECTV and CPXV, and VACV and CPXV. Although two potential recombinant events with the parental AKPV overlapped with two potential recombination events with the parental ECTV. Curiously, AKPV may undergo recombination with ECTV in the same position of those overlapped recombinant regions and ECTV may contain AKPV-like sequences <sup>7</sup>. In addition, AKPV contained three genes (AKPV-203, AKPV-204 and AKPV-205) that were most similar to Murmansk genes and they may be introduced from/to Murmansk by recombination <sup>7</sup>. One of the recombinant regions between AKPV and CPXV-No-H2 comprised a gene that was most similar to AKPV-203 and Murmansk gene. Moreover, the phylogenetic analyses based on three recombinant regions between AKPV and CPXV suggested that AKPV-like sequences were introduced to CPXV-No-H2 rather than the other way (paper I).

Since CPXV-No-H2 produced atypical V<sup>+/</sup> ATI <sup>71</sup>, we analysed the genes involved in the formation of ATI (**paper I**). Two of the three genes (*p4c and A27L*) were most similar to CPXV\_GerMygEK\_938\_17 genes and the third gene (*atip*) was in the two overlapping recombinant regions between CPXV and AKPV, and CPXV and ECTV (**paper I**). Compared to CPXV-No-H2, AKMV and CPXV-Ger 2010 produced wild type V<sup>+</sup> ATI <sup>7,77,184</sup>. On the other hand, ECTV\_Hampstead displayed V<sup>+</sup> and V<sup>+/</sup> ATI and other ECTV strains produced V<sup>-</sup> ATI <sup>174,183</sup>. ECTV\_Hampstead was the progenitor of the European ECTV outbreaks <sup>391</sup>. The ATI phenotype in CPXV\_GerMygEK\_938\_17 was not reported but we presumed that CPXV\_GerMygEK\_938\_17 produces the wild type V<sup>+</sup> ATI because its *atip, p4c, and A27L* genes were similar to CPXV\_Ger2010\_MKY genes (**paper I**).

It is difficult to reconstruct the evolutionary history of CPXV-NoH2 due to the multiple recombination events. The mosaic genome of CPXV-No-H2 could be explained by symplesiomorphy since most recombinant regions were similar to more than one taxon. However, there was one AKPV-like sequence in CPXV-No-H2 that could not be explained by symplesiomorphy because it was only similar to AKPV. A plausible explanation about the origin of the recombinant regions in CPXV-No-H2 is that it was originated from the recombination of CPXV\_GerMygEK\_938\_17-like virus and AKPV-like virus. Probably both viruses could have circulated in populations of rodents in Europe. Even though the isolation of AKPV was Alaska, its ancestor might circulate in Europe because AKPV contained genes similar to those of Russian *Murmansk virus*<sup>7,305</sup>. The recombinant progeny virus, CPXV-No-H2-like virus, could have suffered genomic changes linked to the adaptation to mice, resulting in ECTV-like virus. CPXV-like virus has been proposed as ancestor of ECTV <sup>78</sup>. Thus, these findings suggested that recombination between OPXV in nature is more common than we thought (**paper I**).

In paper I and II, we demonstrated that CPXV-No-H2 was a natural recombinant CPXV (paper I) and the extensive recombination in OPXV and CPXV (paper II). Recombination is not a foreign evolutionary mechanism in poxviruses. It has been demonstrated in different poxvirus species, both in vivo 6,7,71,77,302,392 and in vitro 326,393-396. Hazard characterization of MVA vectored vaccines require the evaluation of potential recombination between the vector and naturally circulating OPXV. In our previous study, we performed co-infection and superinfection experiments of semi-permissive Vero cells with MVA-HANP and CPXV-No-F1 and showed that recombination occurred during in vitro co-infection and superinfection of Vero cells <sup>133</sup>. In **paper III**, we performed whole genome sequencing of these progeny viruses obtained from confection and superinfection of Vero cells. Our results confirmed the recombination with MVA-HANP and CPXV-No-F1 in cells where MVA poorly multiplies (Vero cells). It demonstrated that the recombination occurred in semi-permissive Vero cells, despite they did not form mature particles <sup>287</sup>. This is not surprising because viral DNA replication is unimpaired in non-permissive cells to MVA infection <sup>119,286</sup>. Therefore, MVA could undergo recombination in semi- and non-permissive cells because poxviral recombination only requires that the linear DNA molecules share 12 bp of homology <sup>325</sup>. On the other hand, the superinfection exclusion did not prevent the superinfection of Vero cells in spite of the superinfection time of 6 hours. It has been reported that 6 hours after primary infection with VACV produced 99% exclusion of superinfecting virus <sup>397</sup>.

In **paper III**, the genomic characterization of progeny viruses derived from co-infected and superinfected Vero cells revealed that their genomes were a mosaic of the MVA-HANP and CPXV-No-F1 genomes, except for the progeny virus R9. The distribution of the recombination events in the progeny virus genomes was aleatory (**paper III**). Recombination events took place both in conserved central regions (*F4L - A24R*) and variable terminal regions (**paper III**). Similar observations were also made in the natural recombinant CPXV-No-H2 (**paper III**). However, it has been reported that the recombination events in OPXV are more common in the terminal genomic region than the central region  $^{6,7,77,84,199,300}$ . Interestingly, there was a genomic

region (*CPXV-Br010* to *CPXV-Br043* gene) in the recombinant progeny viruses where recombination events did not occur (**paper III**). Although two recombinant viruses had suffered a large deletion in this region, from *CPXV-Br016* to *CPXV-Br029* gene (**paper III**).

The proportion of the parental genomes in the progeny virus genomes was not uniform. Most recombinant viruses comprised more CDS from CPXV-No-F1 (**paper III**). This could be because Vero cells were permissive to CPXV-No-F1 infection and the selection of progeny viruses based on visible plaques in Vero cells also biased selection in favor of viruses with more CPXV genomes since CPXV forms plaques in Vero while MVA/MVA-HANP does not. To gain a comprehensive understanding of recombination between MVA vector and naturally circulating CPXV, the limitations of culture-based selection can be overcome by metagenomic sequencing of co-infected and superinfected cells.

Various progeny viruses displayed plaque phenotypes distinct to that of parental viruses and some of them expressed the *HA* transgene (**paper III**). Similar findings were observed in the progeny viruses from co-infected BHK-21 cells and superinfected Vero cells (using 2 hours) <sup>133,326</sup>. Our progeny viruses produced different plaques phenotypes, such as non-lytic plaques with comet formation (**paper III**). The plaque morphology of the progeny viruses was affected by the presence or absence of genes involved in the syncytium and plaque formation (*F5L*, *F11L*, *F12L*, *F13L*, *A33R*, *A34R*, A36R, *A56R*, *B5R* and *K2L* genes) <sup>250,252,253,259,262,263,398-401</sup>. Some of these genes were fragmented (e.g. *F5L* and *F11L* gene) or have suffered small internal deletions (e.g. *A36R*) in MVA <sup>120</sup>. For instance, a recombinant progeny virus contained the *F5L*, *F11L*, *A36R*, *A33R*, *A34R* and *B5R* genes from MVA-HANP and formed small and non-lytic plaques with comet formation (**paper III**).

Within the progeny viruses, there was a non-recombinant that formed plaques with syncytium formation. The genomic analysis revealed that its *K2L* gene had one non-synonymous single-nucleotide mutation (nsSNM) that caused the truncation of the gene (**paper III**). It has been reported that the lack of the *K2L* gene caused the fusion of infected cells  $^{251-253}$ . Besides nsSNMs, other genetic mutations such as deletion were detected in the progeny viruses. A large deletion (~16 kbp) was found in two recombinant viruses from superinfected Vero cells (**paper III**).

A partial deletion of double expression cassette (harbouring both influenza virus *HA* and *NP* transgenes) was detected in the parental MVA-HANP as well as in one recombinant progeny virus (**paper III**). The instability of the *HA* transgene has been also observed in MVA-HANP and in recombinant progeny viruses from co-infected BHK-21 cells <sup>327</sup>. Other studies also showed the transgene instability in recombinant MVA vectors <sup>335–338</sup>. In MVA-HANP, the transgene was inserted in the hybrid genes A51/56, where MVA has suffered a deletion (deletion III) (**paper III**). One study compared the stability of the transgene inserted in different regions of the MVA genome (including deletion II, deletion III, the *CP77* gene locus and the *I8R-G1L* intergenic region) after 35 passages and showed that transgene was most stable in the intergenic region compared to the other regions (including deletion III) <sup>402</sup>.

We observed that the recombinant progeny viruses, with more DNA derived from MVA (>50%), rescued some deleted and/or fragmented genes from CPXV, including host range genes (**paper III**). One of the main concerns about the recombination of MVA vectored vaccine with a multiplication competent OPXV is the rescue of missing or fragmented host range genes in MVA and, hence, restoring the wild-type phenotype <sup>133,322</sup>. Another concern is the transfer of the transgene from OPXV vectored vaccine into a multiplication competent OPXV <sup>133,322</sup>. Our data showed that the recombinant viruses with a genome more similar to CPXV-No-F1 contained the transgenic cassette from MVA-HANP (**paper III**).

The recombination of a wild type OPXV and a poxvirus vaccine has been reported <sup>328</sup>. A Russian recombinant virus showed evidence of 27 recombinant events. Their possible parentals were a field LSDV strain and an LSD vaccine <sup>328</sup>. In following LSDV outbreaks only vaccine-like LSDV strains have been detected instead of the wild type LSDV strains <sup>329,330</sup>. However, some researchers suggested the recombinant viruses could be a result of spillover from vaccinated animals <sup>331</sup>.

# 7. CONCLUSION AND FUTURE PERSPECTIVES

We have shown that recombination is a common evolutionary mechanism that occurred between OPXV in nature. CPXV-No-H2 was an example of a natural occurring CPXV that might have undergone several recombination events between different OPXV species isolated from different continents. Furthermore, CPXV, which is the potential candidate for recombination with MVA vectored vaccine, had a high genetic diversity and was an assemblage of several sub-species. Among CPXV strains, three CPXV strains (including CPXV-No-H2) were closely related to ECTV and Abatino and formed a new, distinct CPXV clade named "ECTV-Abatino-like CPXV". With the current genetic information of CPXV strains the evolutionary history of CPXV could not be elucidated. We demonstrated that progeny viruses obtained from co-infection and superinfection *in vitro* of semi-permissive Vero cells with MVA-HANP and CPXV-No-F1 displayed novel biological and genetic characteristics. Furthermore, the rescue of deleted or fragmented MVA genes in recombinant progeny viruses was possible as well the transfer of the transgene to CPXV. Overall, our findings provide relevant data for the hazard characterization of MVA vectored vaccines and, hence, improving the biosafety of MVA vectored vaccines.

The diversity and evolution of CPXV as well as the recombination between OPXV are still not completely elucidated. The diversity of CPXV has awoken debates about the reclassification of CPXV. However, for the re-classification of CPXV, the biological characterization of the CPXV strains is also required. Together, the genetic and biological characterization would provide a better understanding of diversity of CPXV as well as the evolution of CPXV and OPXV. In order to understand the evolution of CPXV, it is necessary to increase surveillance of OPXV (including CPXV) in different species and regions and acquire ancient CPXV strains. The recombination studies reported in this thesis were under *in vitro* conditions, which could differ from *in vivo* conditions. Thus, future studies should examine recombination *in vivo* particularly in immunocompetent and immunocompromised animal models.

#### 8. REFERENCES

- 1. Moss, B. Poxviridae. in *Fields virology* (eds. Knipe, D. & Howley, P.) 2129–2159 (Lippincott Williams & Wilkins (LWW), 2013).
- 2. Diven, D. G. An overview of poxviruses. *Journal of the American Academy of Dermatology* **44**, (2001).
- 3. Silva, N. I. O., de Oliveira, J. S., Kroon, E. G., Trindade, G. de S. & Drumond, B. P. Here, There, and Everywhere: The Wide Host Range and Geographic Distribution of Zoonotic Orthopoxviruses. *Viruses* **13**, (2021).
- 4. Smithson, C. *et al.* The genomes of three North American orthopoxviruses. *Virus Genes* **53**, 21–34 (2017).
- Cardeti, G. *et al.* Fatal Outbreak in Tonkean Macaques Caused by Possibly Novel Orthopoxvirus, Italy, January 2015 - Volume 23, Number 12—December 2017 - Emerging Infectious Diseases journal - CDC. *Emerg. Infect. Dis.* 23, 1941–1949 (2017).
- 6. Gao, J. *et al.* Genome sequences of Akhmeta virus, an early divergent old world orthopoxvirus. *Viruses* **10**, (2018).
- 7. Gigante, C. M. *et al.* Genome of Alaskapox Virus, a Novel Orthopoxvirus Isolated from Alaska. *Viruses* **11**, (2019).
- 8. McFadden, G. Poxvirus tropism. *Nature Reviews Microbiology* **3**, (2005).
- 9. Behbehani, A. M. The smallpox story: Life and death of an old disease. *Microbiological Reviews* **47**, (1983).
- 10. Fenner, F., Henderson, D., Arita, I., Jezek, Z. & Ladnyi, D. Smallpox and its eradication. (WHO, 1988).
- 11. Berche, P. Life and death of smallpox. *Press. Medicale* **51**, 104117 (2022).
- 12. Moore, J. C. *The history of the small pox.* (1815).
- 13. Farhi, D. & Dupin, N. Origins of syphilis and management in the immunocompetent patient: Facts and controversies. *Clin. Dermatol.* **28**, (2010).
- 14. Hopkins, D. Ramses V: earliest know victim? 22–26 (1980).
- 15. Ellner, P. D. Smallpox: Gone but not forgotten. *Infection* 26, (1998).
- Deria, A., Jezek, Z., Markvart, K., Carrasco, P. & Weisfeld, J. The world's last endemic case of smallpox: surveillance and containment measures. *Bull. World Health Organ.* 58, 279 (1980).
- 17. WHO. The global eradication of smallpox : final report of the Global Commission for the Certification of Smallpox Eradication, Geneva, December 1979. (1980).
- 18. Shchelkunova, G. A. & Shchelkunov, S. N. 40 Years without Smallpox. *Acta Naturae* **9**, (2017).
- 19. WHO. A74/43 Report by the Director-General Smallpox eradication. (2021).

- 20. Barquet, N. & Domingo, P. Smallpox: The triumph over the most terrible of the ministers of death. *Ann. Intern. Med.* **127**, (1997).
- 21. Jenner, E. The Three Original Publications On Vaccination Against Smallpox. in *The Harvard Classics, Vol. XXXVIII, Part 4* (1909).
- 22. Jenner, E. An inquiry into the causes and effects of the variolae vaccinae: a disease discovered in some of the western counties of England, particularly Gloucestershire, and known by the name of the cow pox. *Springf. [Mass.] Re-printed Dr. Samuel Cool. by Ashley Brew. 1802* 134 (1802).
- 23. Willis, N. J. Edward Jenner and the eradication of smallpox. *Scottish Medical Journal* **42**, (1997).
- 24. Tuells, J. Vaccinology: The name, the concept, the adjectives. *Vaccine* **30**, (2012).
- 25. Pearson, G. An Examination of the Report of the Committee of the House of Commons on the Claims of Remuneration for the Vaccine Pock Inoculation. (1802).
- 26. Esparza, J., Schrick, L., Damaso, C. R. & Nitsche, A. Equination (inoculation of horsepox): An early alternative to vaccination (inoculation of cowpox) and the potential role of horsepox virus in the origin of the smallpox vaccine. *Vaccine* **35**, 7222–7230 (2017).
- 27. Damaso, C. R. Revisiting Jenner's mysteries, the role of the Beaugency lymph in the evolutionary path of ancient smallpox vaccines. *The Lancet Infectious Diseases* **18**, (2018).
- 28. Brinkmann, A., Souza, A. R. V., Esparza, J., Nitsche, A. & Damaso, C. R. Re-assembly of nineteenth-century smallpox vaccine genomes reveals the contemporaneous use of horsepox and horsepox-related viruses in the USA. *Genome Biology* **21**, (2020).
- 29. Pead, P. J. Benjamin Jesty: New light in the dawn of vaccination. *Lancet* **362**, (2003).
- 30. Hammarsten, J. F., Tattersall, W. & Hammarsten, J. E. Who discovered smallpox vaccination? Edward Jenner or Benjamin Jesty? *Transactions of the American Clinical and Climatological Association* **Vol. 90**, (1978).
- 31. Chantrey, J. *et al.* Cowpox: reservoir hosts and geographic range. *Epidemiol. Infect.* **122**, 455 (1999).
- 32. Wolfs, T. F. W., Wagenaar, J. A., Niesters, H. G. M. & Osterhaus, A. D. M. E. Rat-to-Human Transmission of Cowpox Infection. *Emerg. Infect. Dis.* **8**, 1495 (2002).
- Laakkonen, J. *et al.* Serological Survey for Viral Pathogens in Turkish Rodents. J. Wildl. Dis. 42, 672–676 (2006).
- 34. Vorou, R. M., Papavassiliou, V. G. & Pierroutsakos, I. N. Cowpox virus infection: An emerging health threat. *Curr. Opin. Infect. Dis.* **21**, 153–156 (2008).
- 35. Popova, A. Y. *et al.* Cowpox in a human, Russia, 2015. *Epidemiol. Infect.* **145**, 755–759 (2017).
- 36. Diaz, J. H. The Disease Ecology, Epidemiology, Clinical Manifestations, Management, Prevention, and Control of Increasing Human Infections with Animal Orthopoxviruses. *Wilderness Environ. Med.* **32**, 528–536 (2021).
- 37. Ferrier, A. et al. Fatal cowpox virus infection in human fetus, france, 2017. Emerg. Infect. Dis.

**27**, 2570–2577 (2021).

- 38. Oliveira, G. P., Rodrigues, R. A. L., Lima, M. T., Drumond, B. P. & Abrahão, J. S. Poxvirus Host Range Genes and Virus–Host Spectrum: A Critical Review. *Viruses 2017, Vol. 9, Page 331* **9**, 331 (2017).
- 39. Bratke, K. A., McLysaght, A. & Rothenburg, S. A survey of host range genes in poxvirus genomes. *Infect. Genet. Evol.* **14**, 406–425 (2013).
- 40. Shchelkunov, S. N. *et al.* The genomic sequence analysis of the left and right species-specific terminal region of a cowpox virus strain reveals unique sequences and a cluster of intact ORFs for immunomodulatory and host range proteins. *Virology* **243**, 432–460 (1998).
- 41. Kinnunen, P. M. *et al.* Orthopox Virus Infections in Eurasian Wild Rodents. *https://home.liebertpub.com/vbz* **11**, 1133–1140 (2011).
- 42. Prkno, A. *et al.* Epidemiological investigations of four cowpox virus outbreaks in alpaca herds, Germany. *Viruses* **9**, 1–15 (2017).
- 43. Girling, S. J., Pizzi, R., Cox, A. & Beard, P. M. Fatal cowpox virus infection in two squirrel monkeys (Saimiri sciureus). *Vet. Rec.* **169**, 156–156 (2011).
- 44. Smith, K. C., Bennett, M. & Garrett, D. C. Skin lesions caused by orthopoxvirus infection in a dog. *J. Small Anim. Pract.* **40**, 495–497 (1999).
- 45. Tryland, M., Myrmel, H., Holtet, L., Haukenes, G. & Traavik, T. Clinical cowpox cases in Norway. *Scand. J. Infect. Dis.* **30**, 301–303 (1998).
- 46. Martina, B. E. E. *et al.* Cowpox Virus Transmission from Rats to Monkeys, the Netherlands. *Emerg. Infect. Dis.* **12**, 1005 (2006).
- 47. Essbauer, S., Pfeffer, M. & Meyer, H. Zoonotic poxviruses. *Vet. Microbiol.* **140**, 229–236 (2010).
- 48. Carletti, F. *et al.* Cat-to-human orthopoxvirus transmission, northeastern Italy. *Emerging Infectious Diseases* **15**, (2009).
- 49. Świtaj, K., Kajfasz, P., Kurth, A. & Nitsche, A. Cowpox after a cat scratch case report from Poland. *Ann. Agric. Environ. Med.* 22, (2015).
- 50. Hemmer, C. J. *et al.* Human cowpox virus infection acquired from a circus elephant in Germany. *Int. J. Infect. Dis.* **14**, (2010).
- 51. Kurth, A. *et al.* Cowpox virus outbreak in banded mongooses (mungos mungo) and jaguarundis (Herpailurus yagouaroundi) with a time-delayed infection to humans. *PLoS One* **4**, (2009).
- 52. Elsendoorn, A. *et al.* Severe ear chondritis due to cowpox virus transmitted by a pet rat. *J. Infect.* **63**, (2011).
- 53. Hobi, S. *et al.* Neurogenic inflammation and colliquative lymphadenitis with persistent orthopox virus DNA detection in a human case of cowpox virus infection transmitted by a domestic cat. *Br. J. Dermatol.* **173**, (2015).
- 54. Kurth, A. *et al.* Rat-to-Elephant-to-Human Transmission of Cowpox Virus. *Emerg. Infect. Dis.* **14**, 670 (2008).

- 55. Vogel, S. *et al.* The Munich outbreak of cutaneous cowpox infection: Transmission by infected pet rats. *Acta Derm. Venereol.* **92**, (2012).
- 56. Becker, C. *et al.* Cowpox Virus Infection in Pet Rat Owners: Not Always Immediately Recognized. *Dtsch. Arztebl. Int.* **106**, 329 (2009).
- 57. Ducournau, C. *et al.* Concomitant human infections with 2 cowpox virus strains in related cases, France, 2011. *Emerg. Infect. Dis.* **19**, (2013).
- 58. Favier, A. L. *et al.* Necrotic ulcerated lesion in a young boy caused by cowpox virus infection. *Case Rep. Dermatol.* **3**, (2011).
- 59. Bonnekoh, B. et al. Cowpox infection transmitted from a domestic cat. JDDG 6, (2008).
- 60. Lawn, R. Risk of cowpox to small animal practitioners. Veterinary Record 166, (2010).
- 61. Fassbender, P. *et al.* Generalized cowpox virus infection in a patient with HIV, Germany, 2012. *Emerging Infectious Diseases* **22**, (2016).
- 62. Gazzani, P. *et al.* Fatal disseminated cowpox virus infection in an adolescent renal transplant recipient. *Pediatr. Nephrol.* **32**, (2017).
- 63. Eis-Hubinger, A. M. *et al.* Fatal cowpox-like virus infection transmitted by cat. *The Lancet* **336**, (1990).
- 64. Willemse, A. & Egberink, H. F. Transmission of cowpox virus infection from domestic cat to man. *Lancet (London, England)* **1**, 1515 (1985).
- 65. Wendt, R. *et al.* Generalized cowpox virus infection in an immunosuppressed patient. *International Journal of Infectious Diseases* **106**, (2021).
- 66. Stagegaard, J. *et al.* Seasonal recurrence of cowpox virus outbreaks in captive cheetahs (Acinonyx jubatus). *PLoS One* **12**, (2017).
- 67. Antwerpen, M. H. *et al.* Use of next generation sequencing to study two cowpox virus outbreaks. *PeerJ* **2019**, 1–17 (2019).
- 68. Tryland, M. *et al.* Characteristics of four cowpox virus isolates from Norway and Sweden. *APMIS* **106**, 623–635 (1998).
- 69. Cronqvist, J., Ekdahl, K., Kjartansdottir, A., Bauer, B. & Klinker, M. [Cowpox--a cat disease in man] . *Lakartidningen* **88**, 2605–2606 (1991).
- Hansen, H., Okeke, M. I., Nilssen, Ø. & Traavik, T. Comparison and phylogenetic analysis of cowpox viruses isolated from cats and humans in Fennoscandia. *Arch. Virol.* 154, 1293–1302 (2009).
- 71. Okeke, M. I., Hansen, H. & Traavik, T. A naturally occurring cowpox virus with an ectromelia virus A-type inclusion protein gene displays atypical A-type inclusions. *Infect. Genet. Evol.* **12**, 160–168 (2012).
- 72. Okeke, M. I. *et al.* Molecular characterization and phylogenetics of Fennoscandian cowpox virus isolates based on the p4c and atip genes. *Virol. J.* **11**, 1–16 (2014).
- 73. Mauldin, M. R. *et al.* Cowpox virus: What's in a Name? *Viruses 2017, Vol. 9, Page 101* **9**, 101 (2017).

- 74. Bruneau, R. C., Tazi, L. & Rothenburg, S. Cowpox Viruses : A Zoo Full of Viral Diversity and Lurking Threats. (2023).
- 75. Carroll, D. S. *et al.* Chasing Jenner's vaccine: Revisiting Cowpox virus classification. *PLoS One* **6**, 4–9 (2011).
- 76. Dabrowski, P. W., Radonić, A., Kurth, A. & Nitsche, A. Genome-wide comparison of cowpox viruses reveals a new clade related to variola virus. *PLoS One* **8**, 1–9 (2013).
- 77. Franke, A. *et al.* Classification of cowpox viruses into several distinct clades and identification of a novel lineage. *Viruses* **9**, 1–14 (2017).
- 78. Jeske, K. *et al.* Molecular Detection and Characterization of the First Cowpox Virus Isolate Derived from a Bank Vole. *Viruses* **11**, (2019).
- 79. Downie, A. W. A study of the lesions produced experimentally by cowpox virus. *J. Pathol. Bacteriol.* **48**, (1939).
- 80. Pilaski, J. & Rösen-Wolff, A. Poxvirus Infection in Zoo-Kept Mammals. in (1988). doi:10.1007/978-1-4613-2091-3\_5
- 81. Zwart, P., Gispen, R. & Peters, J. C. Cowpox in okapis Okapia johnstoni at Rotterdam zoo. *Br. Vet. J.* **127**, (1971).
- 82. Baxby, D. Laboratory Characteristics of British and Dutch Strains of Cowpox Virus. Zentralblatt für Veterinärmedizin R. B 22, (1975).
- 83. Marennikova, S. S., Maltseva, N. N., Korneeva, V. I. & Garanina, N. M. Outbreak of pox disease among carnivora (Felidae) and edentata. *J. Infect. Dis.* **135**, (1977).
- 84. Gubser, C., Hué, S., Kellam, P. & Smith, G. L. Poxvirus genomes: A phylogenetic analysis. *J. Gen. Virol.* **85**, 105–117 (2004).
- 85. Molteni, C., Forni, D., Cagliani, R., Clerici, M. & Sironi, M. Genetic ancestry and population structure of vaccinia virus. *npj Vaccines* **7**, (2022).
- 86. Esparza, J. & Damaso, C. R. Searching for the origin of the smallpox vaccine: Edward Jenner and his little-known horsepox hypothesis. *Vaccine* **40**, (2022).
- 87. Singh, R. K., Balamurugan, V., Bhanuprakash, V., Venkatesan, G. & Hosamani, M. Emergence and reemergence of vaccinia-like viruses: Global scenario and perspectives. *Indian Journal of Virology* **23**, (2012).
- 88. de Oliveira, J. S. *et al.* Vaccinia virus natural infections in Brazil: The good, the bad, and the ugly. *Viruses* **9**, (2017).
- 89. Eltom, K. H., Samy, A. M., Wahed, A. A. El & Czerny, C. P. Buffalopox virus: An emerging virus in livestock and humans. *Pathogens* **9**, (2020).
- 90. Miranda, J. B. *et al.* Serologic and Molecular Evidence of Vaccinia Virus Circulation among Small Mammals from Different Biomes, Brazil. *Emerg. Infect. Dis.* **23**, 931 (2017).
- 91. Baxby, D. & Hill, B. J. Characteristics of a new poxvirus isolated from indian buffaloes. *Arch. Gesamte Virusforsch.* **35**, (1971).
- 92. Lima, M. T. et al. An update on the known host range of the brazilian vaccinia virus: An

outbreak in Buffalo Calves. Front. Microbiol. 10, (2019).

- 93. Roy, P. & Chandramohan, A. Buffalopox Disease in Livestock and Milkers, India. *Emerg. Infect. Dis.* **27**, (2021).
- 94. MacNeill, A. L. Comparative Pathology of Zoonotic Orthopoxviruses. *Pathogens* **11**, 1–22 (2022).
- 95. Zafar, A. *et al.* Nosocomial Buffalopoxvirus Infection, Karachi, Pakistan. *Emerg. Infect. Dis.* **13**, 904 (2007).
- 96. Singh, R. K. *et al.* An outbreak of buffalopox in buffalo (Bubalus bubalis) dairy herds in Aurangabad, India. *OIE Rev. Sci. Tech.* **25**, (2006).
- 97. Franco-Luiz, A. P. M. *et al.* Spread of vaccinia virus to cattle herds, Argentina, 2011. *Emerging Infectious Diseases* **20**, (2014).
- 98. Usme-Ciro, J. A. *et al.* Detection and molecular characterization of zoonotic poxviruses circulating in the amazon region of Colombia, 2014. *Emerg. Infect. Dis.* **23**, (2017).
- 99. Medaglia, M. L. G., Pessoa, L. C. G. D., Sales, E. R. C., Freitas, T. R. P. & Damaso, C. R. Spread of Cantagalo virus to northern Brazil. *Emerging Infectious Diseases* **15**, (2009).
- 100. Trindade, G. S. *et al.* Belo Horizonte virus: A vaccinia-like virus lacking the A-type inclusion body gene isolated from infected mice. *J. Gen. Virol.* **85**, (2004).
- 101. Brum, M. C. S. *et al.* An outbreak of orthopoxvirus-associated disease in horses in southern Brazil. *J. Vet. Diagnostic Investig.* **22**, (2010).
- 102. Abrahão, J. S. *et al.* Vaccinia virus infection in monkeys, Brazilian Amazon. *Emerg. Infect. Dis.* **16**, (2010).
- 103. Damaso, C. R. A., Esposito, J. J., Condit, R. C. & Moussatché, N. An emergent poxvirus from humans and cattle in Rio de Janeiro state: Cantagalo virus may derive from brazilian smallpox vaccine. *Virology* **277**, (2000).
- 104. Bhanuprakash, V. *et al.* Zoonotic infections of buffalopox in India. *Zoonoses Public Health* **57**, (2010).
- 105. Laiton-Donato, K. *et al.* Progressive vaccinia acquired through zoonotic transmission in a patient with HIV/AIDS, Colombia. *Emerg. Infect. Dis.* **26**, (2020).
- Oliveira, G. P. *et al.* Short report: Intrafamilial transmission of Vaccinia virus during a bovine vaccinia outbreak in Brazil: A new insight in viral transmission chain. *Am. J. Trop. Med. Hyg.* **90**, (2014).
- 107. Batista, V. H., Scremin, J., Aguiar, L. M. & Schatzmayr, H. G. VULVAR INFECTION AND POSSIBLE HUMAN-TO-HUMAN TRANSMISSION OF BOVINE POXVIRUS DISEASE. *VIRUS Rev. Res.* 14, (2009).
- 108. Jacobs, B. L. *et al.* Vaccinia Virus Vaccines: Past, Present and Future. *Antiviral Res.* 84, 1 (2009).
- 109. Sánchez-Sampedro, L. et al. The evolution of poxvirus vaccines. Viruses 7, (2015).
- 110. Rosenthal, S. R., Merchlinsky, M., Kleppinger, C. & Goldenthal, K. L. Developing new

smallpox vaccines. Emerg. Infect. Dis. 7, 920-926 (2001).

- Qin, L., Liang, M. & Evans, D. H. Genomic analysis of vaccinia virus strain TianTan provides new insights into the evolution and evolutionary relationships between Orthopoxviruses. *Virology* 442, (2013).
- 112. Belongia, E. A. & Naleway, A. L. Smallpox vaccine: the good, the bad, and the ugly. *Clinical medicine & research* 1, (2003).
- 113. Kenner, J., Cameron, F., Empig, C., Jobes, D. V. & Gurwith, M. LC16m8: An attenuated smallpox vaccine. *Vaccine* **24**, 7009–7022 (2006).
- 114. Mayr, A., Stickl, H., Müller, H. K., Danner, K. & Singer, H. [The smallpox vaccination strain MVA: marker, genetic structure, experience gained with the parenteral vaccination and behavior in organisms with a debilitated defence mechanism (author's transl)]. *Zentralbl. Bakteriol. B.* **167**, (1978).
- 115. Tartaglia, J. *et al.* NYVAC: a highly attenuated strain of vaccinia virus. *Virology* **188**, 217–232 (1992).
- 116. Paran, N. & Sutter, G. Smallpox vaccines: New formulations and revised strategies for vaccination. *Human vaccines* **5**, (2009).
- 117. Kennedy, R. B., Ovsyannikova, I. & Poland, G. A. Smallpox vaccines for biodefense. *Vaccine* **27**, (2009).
- 118. Smith, G. L. & Moss, B. Infectious poxvirus vectors have capacity for at least 25 000 base pairs of foreign DNA. *Gene* **25**, (1983).
- 119. Volz, A. & Sutter, G. Modified Vaccinia Virus Ankara: History, Value in Basic Research, and Current Perspectives for Vaccine Development. in *Advances in Virus Research* **97**, (2017).
- 120. Antoine, G., Scheiflinger, F., Dorner, F. & Falkner, F. G. The complete genomic sequence of the modified vaccinia Ankara strain: Comparison with other orthopoxviruses. *Virology* **244**, (1998).
- 121. Meyer, H., Sutter, G. & Mayr, A. Mapping of deletions in the genome of the highly attenuated vaccinia virus MVA and their influence on virulence. *J. Gen. Virol.* **72**, (1991).
- 122. Meisinger-Henschel, C. *et al.* Genomic sequence of chorioallantois vaccinia virus Ankara, the ancestor of modified vaccinia virus Ankara. *J. Gen. Virol.* **88**, 3249–3259 (2007).
- 123. Blanchard, T. J., Alcamí, A., Andrea, P. & Smith, G. L. Modified vaccinia virus Ankara undergoes limited replication in human cells and lacks several immunomodulatory proteins: Implications for use as a human vaccine. *J. Gen. Virol.* **79**, (1998).
- 124. Carroll, M. W. & Moss, B. Host range and cytopathogenicity of the highly attenuated MVA strain of vaccinia virus: Propagation and generation of recombinant viruses in a nonhuman mammalian cell line. *Virology* **238**, (1997).
- 125. Hornemann, S. *et al.* Replication of Modified Vaccinia Virus Ankara in Primary Chicken Embryo Fibroblasts Requires Expression of the Interferon Resistance Gene E3L. *J. Virol.* **77**, (2003).
- 126. Pittman, P. R. *et al.* Phase 3 Efficacy Trial of Modified Vaccinia Ankara as a Vaccine against Smallpox. *N. Engl. J. Med.* **381**, (2019).

- 127. Mayr, A. Smallpox vaccination and bioterrorism with pox viruses. *Comp. Immunol. Microbiol. Infect. Dis.* **26**, (2003).
- 128. Mahnel, H. & Mayr, A. Experiences with immunization against orthopox viruses of humans and animals using vaccine strain MVA. *Berl. Munch. Tierarztl. Wochenschr.* **107**, (1994).
- 129. European Medicines Agency. EMA recommends approval of Imvanex for the prevention of monkeypox disease. (2022). Available at: https://www.ema.europa.eu/en/news/ema-recommends-approval-imvanex-prevention-monkeypox-disease. (Accessed: 1st January 2023)
- 130. U.S. Food and Drugs. Vaccines Licensed for Use in the United States. (2022). Available at: https://www.fda.gov/vaccines-blood-biologics/vaccines/vaccines-licensed-use-united-states.
- 131. Chopra, H. *et al.* FDA approved vaccines for monkeypox: Current eminence. *Int. J. Surg.* **105**, (2022).
- 132. Suter, M. *et al.* Modified vaccinia Ankara strains with identical coding sequences actually represent complex mixtures of viruses that determine the biological properties of each strain. *Vaccine* **27**, (2009).
- 133. Okeke, M. I. *et al.* Hazard characterization of modified vaccinia virus ankara vector: What are the knowledge gaps? *Viruses* **9**, (2017).
- 134. Orlova, O. V., Glazkova, D. V., Bogoslovskaya, E. V., Shipulin, G. A. & Yudin, S. M. Development of Modified Vaccinia Virus Ankara-Based Vaccines: Advantages and Applications. *Vaccines* **10**, (2022).
- 135. Joachim, A. *et al.* Potent functional antibody responses elicited by HIV-I DNA priming and boosting with heterologous HIV-1 recombinant MVA in healthy tanzanian adults. *PLoS One* **10**, (2015).
- 136. Nilsson, C. *et al.* Broad and potent cellular and humoral immune responses after a second late HIV-modified vaccinia virus ankara vaccination in HIV-DNA-primed and HIV-modified vaccinia virus ankara-boosted swedish vaccinees. *AIDS Res. Hum. Retroviruses* **30**, (2014).
- 137. Milligan, I. D. *et al.* Safety and immunogenicity of novel adenovirus type 26-and modified vaccinia Ankara-vectored Ebola vaccines: A randomized clinical trial. *JAMA J. Am. Med. Assoc.* **315**, (2016).
- 138. Tapia, M. D. *et al.* Use of ChAd3-EBO-Z Ebola virus vaccine in Malian and US adults, and boosting of Malian adults with MVA-BN-Filo: a phase 1, single-blind, randomised trial, a phase 1b, open-label and double-blind, dose-escalation trial, and a nested, randomised, double-blind, placebo-controlled trial. *Lancet Infect. Dis.* **16**, (2016).
- 139. Callendret, B. *et al.* A prophylactic multivalent vaccine against different filovirus species is immunogenic and provides protection from lethal infections with Ebolavirus and Marburgvirus species in non-human primates. *PLoS One* **13**, (2018).
- 140. Fuentes, S., Ravichandran, S., Coyle, E. M., Klenow, L. & Khurana, S. Human Antibody Repertoire following Ebola Virus Infection and Vaccination. *iScience* **23**, (2020).
- Jordan, E. *et al.* Broad Antibody and Cellular Immune Response from a Phase 2 Clinical Trial with a Novel Multivalent Poxvirus-Based Respiratory Syncytial Virus Vaccine. *J. Infect. Dis.* 223, (2021).
- 142. Koch, T. et al. Safety and immunogenicity of a modified vaccinia virus Ankara vector vaccine

candidate for Middle East respiratory syndrome: an open-label, phase 1 trial. *Lancet Infect. Dis.* **20**, (2020).

- 143. Aldoss, I. *et al.* Poxvirus vectored cytomegalovirus vaccine to prevent cytomegalovirus viremia in transplant recipients: A phase 2, randomized clinical trial. *Ann. Intern. Med.* **172**, (2020).
- 144. Kreijtz, J. H. C. M. *et al.* Safety and immunogenicity of a modified-vaccinia-virus-Ankarabased influenza A H5N1 vaccine: A randomised, double-blind phase 1/2a clinical trial. *Lancet Infect. Dis.* **14**, (2014).
- 145. Puksuriwong, S. *et al.* Modified vaccinia Ankara-vectored vaccine expressing nucleoprotein and matrix protein 1 (M1) activates mucosal M1-specific T-Cell immunity and tissue-resident memory T Cells in human nasopharynx-associated lymphoid tissue. *J. Infect. Dis.* **222**, (2020).
- 146. Tameris, M. D. *et al.* Safety and efficacy of MVA85A, a new tuberculosis vaccine, in infants previously vaccinated with BCG: A randomised, placebo-controlled phase 2b trial. *Lancet* **381**, (2013).
- 147. Hodgson, S. H. *et al.* Evaluation of the efficacy of ChAd63-MVA vectored vaccines expressing circumsporozoite protein and ME-TRAP against controlled human malaria infection in malaria-naive individuals. in *Journal of Infectious Diseases* **211**, (2015).
- 148. Biswas, S. *et al.* Assessment of humoral immune responses to blood-stage malaria antigens following ChAd63-MVA immunization, controlled human malaria infection and natural exposure. *PLoS One* **9**, (2014).
- 149. Sebastian, S. & Gilbert, S. C. Recombinant modified vaccinia virus Ankara-based malaria vaccines. *Expert Review of Vaccines* **15**, (2016).
- 150. Sah, R. *et al.* Monkeypox deaths in 2022 outbreak across the globe : correspondence. *Ann. Med. Surg.* **85(1)**, 57–58 (2023).
- 151. Beer, E. M. & Bhargavi Rao, V. A systematic review of the epidemiology of human monkeypox outbreaks and implications for outbreak strategy. *PLoS Negl. Trop. Dis.* **13**, e0007791 (2019).
- 152. Mbala, P. K. *et al.* Maternal and Fetal Outcomes among Pregnant Women with Human Monkeypox Infection in the Democratic Republic of Congo. *J. Infect. Dis.* **216**, (2017).
- 153. Alakunle, E. & Okeke, M. Monkeypox virus: a neglected zoonotic pathogen spreads globally. *Nat. Rev. Microbiol.* **20**, 507–508 (2022).
- 154. Damon, I. K. Status of human monkeypox: Clinical disease, epidemiology and research. *Vaccine* **29**, (2011).
- 155. Kmiec, D. & Kirchhoff, F. Monkeypox: A New Threat? Int. J. Mol. Sci. 23, (2022).
- 156. WHO. Disease Outbreak News; Multi-country monkeypox outbreak in non-endemic countries. (2022). Available at: https://www.who.int/emergencies/disease-outbreak-news/item/2022-DON385. (Accessed: 20th June 2022)
- 157. Happi, C. *et al.* Urgent need for a non-discriminatory and non-stigmatizing nomenclature for monkeypox virus. *PLoS Biol.* **20**, 1–6 (2022).
- 158. Bunge, E. M. et al. The changing epidemiology of human monkeypox—A potential threat? A

systematic review. PLoS Negl. Trop. Dis. 16, (2022).

- 159. Magnus, P. von, Andersen, E. K., Petersen, K. B. & Birch-Andersen, A. A POX-LIKE DISEASE IN CYNOMOLGUS MONKEYS. *Acta Pathol. Microbiol. Scand.* **46**, (1959).
- 160. Alakunle, E., Moens, U., Nchinda, G. & Okeke, M. I. Monkeypox Virus in Nigeria: Infection Biology, Epidemiology, and Evolution. *Viruses* **12**, (2020).
- Ladnyj, I. D., Ziegler, P. & Kima, E. A human infection caused by monkeypox virus in Basankusu Territory, Democratic Republic of the Congo. *Bull. World Health Organ.* 46, (1972).
- 162. Lourie, B. *et al.* Human infection with monkeypox virus: laboratory investigation of six cases in West Africa. *Bull. World Health Organ.* **46**, (1972).
- 163. Yinka-Ogunleye, A. *et al.* Reemergence of human monkeypox in Nigeria, 2017. *Emerging Infectious Diseases* **24**, (2018).
- 164. Erez, N. *et al.* Diagnosis of Imported Monkeypox, Israel, 2018. *Emerg. Infect. Dis.* **25**, 980 (2019).
- 165. Ng, O. T. *et al.* A case of imported Monkeypox in Singapore. *Lancet. Infect. Dis.* **19**, 1166 (2019).
- 166. Rao, A. K. *et al.* Monkeypox in a Traveler Returning from Nigeria Dallas, Texas, July 2021. *Morb. Mortal. Wkly. Rep.* **71**, 509 (2022).
- 167. Vaughan, A. *et al.* Two cases of monkeypox imported to the United Kingdom, September 2018. *Eurosurveillance* **23**, (2018).
- CDC. Multistate Outbreak of Monkeypox— Illinois, Indiana, and Wisconsin, 2003. JAMA 290(1), 30–31 (2003).
- 169. Petersen, E. *et al.* Human Monkeypox: Epidemiologic and Clinical Characteristics, Diagnosis, and Prevention. *Infectious Disease Clinics of North America* **33**, (2019).
- 170. WHO. Disease Outbreak News; Monkeypox– United Kingdom of Great Britain and Northern Ireland. (2022).
- 171. WHO. 2022-23 Mpox Outbreak: Global Trends. (2023). Available at: https://worldhealthorg.shinyapps.io/mpx\_global/.
- 172. Buller, R. M. Mousepox: A Small Animal Model for Biodefense Research. *Appl. Biosaf.* 9, (2004).
- 173. Marchal, J. Infectious ectromelia. A hitherto undescribed virus disease of mice. J. Pathol. Bacteriol. 33, (1930).
- 174. Mavian, C., López-Bueno, A., Martín, R., Nitsche, A. & Alcamí, A. Comparative pathogenesis, genomics and phylogeography of mousepox. *Viruses* **13**, 1146 (2021).
- 175. Mendez-Rios, J. D. *et al.* Genome sequence of erythromelalgia-related poxvirus identifies it as an ectromelia virus strain. *PLoS One* **7**, (2012).
- 176. Zheng, Z. M., Specter, S., Zhang, J. H., Friedman, H. & Zhu, W. P. Further characterization of the biological and pathogenic properties of erythromelalgia-related poxviruses. *J. Gen. Virol.*

**73**, (1992).

- 177. Neubauer, H., Pfeffer, M. & Meyer, H. Specific detection of mousepox virus by polymerase chain reaction. *Lab. Anim.* **31**, (1997).
- 178. Trentin, J. J. & Briody, B. A. An outbreak of mouse-pox (infectious ectromelia) in the United States: II. Definitive diagnosis. Science **117**, (1953).
- 179. Spohr de Faundez, I. *et al.* Electron microscopy, plaque assay and preliminary serological characterization of three ectromelia virus strains isolated in Poland in the period 1986-1988. *Arch. Virol.* **114**, (1990).
- 180. Lipman, N. S., Nguyen, H. & Perkins, S. Mousepox: A threat to U.S. mouse colonies. *Laboratory Animal Science* **49**, (1999).
- 181. Chapman, J. L., Nichols, D. K., Martinez, M. J. & Raymond, J. W. Animal models of orthopoxvirus infection. *Vet. Pathol.* **47**, (2010).
- 182. Esteban, D., Parker, S., Schriewer, J., Hartzler, H. & Buller, R. M. Mousepox, a small animal model of smallpox. *Methods Mol. Biol.* **890**, (2012).
- 183. Ichihashi, Y. & Matsumoto, S. Studies on the nature of marchal bodies (A-type inclusion) during ectromelia virus infection. *Virology* **29**, 264–275 (1966).
- 184. Springer, Y. P. *et al.* Novel Orthopoxvirus Infection in an Alaska Resident. *Clin. Infect. Dis. An Off. Publ. Infect. Dis. Soc. Am.* **64**, 1737 (2017).
- 185. Hyun, J. Poxvirus under the eyes of electron microscope. Appl. Microsc. 52, (2022).
- 186. Peters, D. Morphology of resting vaccinia virus. *Nature* 178, (1956).
- 187. Dales, S. The uptake and development of vaccinia virus in strain L cells followed with labeled viral deoxyribonucleic acid. *J. Cell Biol.* **18**, (1963).
- 188. Resch, W. & Moss, B. The Conserved Poxvirus L3 Virion Protein Is Required for Transcription of Vaccinia Virus Early Genes. *J. Virol.* **79**, (2005).
- 189. Peters, D. & Müller, G. The fine structure of the DNA-containing core of vaccinia virus. *Virology* **21**, (1963).
- 190. McFadden, B. D. H., Moussatche, N., Kelley, K., Kang, B. H. & Condit, R. C. Vaccinia virions deficient in transcription enzymes lack a nucleocapsid. *Virology* **434**, (2012).
- 191. Condit, R. C., Moussatche, N. & Traktman, P. In A Nutshell: Structure and Assembly of the Vaccinia Virion. *Advances in Virus Research* **65**, (2006).
- 192. Moussatche, N. & Condit, R. C. Fine structure of the vaccinia virion determined by controlled degradation and immunolocalization. *Virology* **475**, (2015).
- 193. Bidgood, S. R. *et al.* Poxviruses package viral redox proteins in lateral bodies and modulate the host oxidative response. *PLoS Pathog.* **18**, (2022).
- 194. Cyrklaff, M. *et al.* Cryo-electron tomography of vaccinia virus. *Proc. Natl. Acad. Sci. U. S. A.* **102**, (2005).
- 195. Rodrigues, T. C. S. et al. Genome characterization of cetaceanpox virus from a managed Indo-

Pacific bottlenose dolphin (Tursiops aduncus). Virus Res. 278, (2020).

- 196. Tulman, E. R. et al. The Genome of Canarypox Virus. J. Virol. 78, (2004).
- 197. Nakazawa, Y. *et al.* Phylogenetic and ecologic perspectives of a monkeypox outbreak, Southern Sudan, 2005. *Emerg. Infect. Dis.* **19**, (2013).
- 198. Hendrickson, R. C., Wang, C., Hatcher, E. L. & Lefkowitz, E. J. Orthopoxvirus Genome Evolution: The Role of Gene Loss. *Viruses* **2**, 1933–1967 (2010).
- 199. Esposito, J. J. *et al.* Genome sequence diversity and clues to the evolution of variola (smallpox) virus. *Science* (80-. ). **313**, (2006).
- 200. Lefkowitz, E. J., Wang, C. & Upton, C. Poxviruses: Past, present and future. *Virus Res.* **117**, (2006).
- 201. Senkevich, T. G., Yutin, N., Wolf, Y. I., Koonin, E. V. & Moss, B. Ancient gene capture and recent gene loss shape the evolution of orthopoxvirus-host interaction genes. *MBio* **12**, (2021).
- 202. Upton, C., Slack, S., Hunter, A. L., Ehlers, A. & Roper, R. L. Poxvirus Orthologous Clusters: toward Defining the Minimum Essential Poxvirus Genome. *J. Virol.* **77**, (2003).
- 203. Seet, B. T. et al. Poxviruses and immune evasion. Annual Review of Immunology 21, (2003).
- 204. Shchelkunov, S. N. Orthopoxvirus genes that mediate disease virulence and host tropism. *Advances in Virology* **2012**, (2012).
- 205. Moss, B. Membrane fusion during poxvirus entry. *Seminars in Cell and Developmental Biology* **60**, (2016).
- 206. Schmidt, F. I., Bleck, C. K. E., Helenius, A. & Mercer, J. Vaccinia extracellular virions enter cells by macropinocytosis and acid-activated membrane rupture. *EMBO J.* **30**, (2011).
- 207. Schmidt, F. I. *et al.* Vaccinia virus entry is followed by core activation and proteasomemediated release of the immunomodulatory effector VH1 from lateral bodies. *Cell Rep.* **4**, (2013).
- 208. Mallardo, M. *et al.* Relationship between Vaccinia Virus Intracellular Cores, Early mRNAs, and DNA Replication Sites. *J. Virol.* **76**, (2002).
- 209. Pedersen, K. *et al.* Characterization of Vaccinia Virus Intracellular Cores: Implications for Viral Uncoating and Core Structure. *J. Virol.* **74**, (2000).
- 210. Carter, G. C. *et al.* Vaccinia virus cores are transported on microtubules. *Journal of General Virology* **84**, (2003).
- 211. Greseth, M. D. & Traktman, P. The Life Cycle of the Vaccinia Virus Genome. *Annu. Rev. Virol.* **9**, 239–259 (2022).
- 212. Ahn, B. Y. & Moss, B. RNA polymerase-associated transcription specificity factor encoded by vaccinia virus. *Proc. Natl. Acad. Sci. U. S. A.* **89**, (1992).
- 213. Yang, Z. *et al.* Expression Profiling of the Intermediate and Late Stages of Poxvirus Replication. *J. Virol.* **85**, (2011).
- 214. Yang, Z. et al. Deciphering Poxvirus Gene Expression by RNA Sequencing and Ribosome

Profiling. J. Virol. 89, (2015).

- 215. Baldick, C. J. & Moss, B. Characterization and temporal regulation of mRNAs encoded by vaccinia virus intermediate-stage genes. *J. Virol.* **67**, (1993).
- Turner, P. C. & Moyer, R. W. The vaccinia virus fusion inhibitor proteins SPI-3 (K2) and HA (A56) expressed by infected cells reduce the entry of superinfecting virus. *Virology* 380, (2008).
- 217. Wagenaar, T. R. & Moss, B. Expression of the A56 and K2 Proteins Is Sufficient To Inhibit Vaccinia Virus Entry and Cell Fusion. *J. Virol.* **83**, (2009).
- 218. Laliberte, J. P. & Moss, B. A Novel Mode of Poxvirus Superinfection Exclusion That Prevents Fusion of the Lipid Bilayers of Viral and Cellular Membranes. *J. Virol.* **88**, (2014).
- 219. Tolonen, N., Doglio, L., Schleich, S. & Krijnse Locker, J. Vaccinia virus DNA replication occurs in endoplasmic reticulum-enclosed cytoplasmic mini-nuclei. *Mol. Biol. Cell* **12**, (2001).
- 220. Cairns, J. The initiation of vaccinia infection. Virology 11, (1960).
- 221. Domi, A. & Beaud, G. The punctate sites of accumulation of vaccinia virus early proteins are precursors of sites of viral DNA synthesis. *J. Gen. Virol.* **81**, (2000).
- 222. Rochester, S. C. & Traktman, P. Characterization of the Single-Stranded DNA Binding Protein Encoded by the Vaccinia Virus I3 Gene. *J. Virol.* **72**, (1998).
- 223. Czarnecki, M. W. & Traktman, P. The vaccinia virus DNA polymerase and its processivity factor. *Virus Research* **234**, (2017).
- 224. Bersch, B., Tarbouriech, N., Burmeister, W. P. & Iseni, F. Solution Structure of the C-terminal Domain of A20, the Missing Brick for the Characterization of the Interface between Vaccinia Virus DNA Polymerase and its Processivity Factor. *J. Mol. Biol.* **433**, (2021).
- 225. Banham, A. H. & Smith, G. L. Vaccinia virus gene B1R encodes a 34-kDa serine/threonine protein kinase that localizes in cytoplasmic factories and is packaged into virions. *Virology* **191**, (1992).
- 226. Murcia-Nicolas, A., Bolbach, G., Blais, J. C. & Beaud, G. Identification by mass spectroscopy of three major early proteins associated with virosomes in vaccinia virus-infected cells. *Virus Res.* **59**, (1999).
- 227. Welsch, S., Doglio, L., Schleich, S. & Krijnse Locker, J. The Vaccinia Virus I3L Gene Product Is Localized to a Complex Endoplasmic Reticulum-Associated Structure That Contains the Viral Parental DNA. J. Virol. **77**, (2003).
- 228. McDonald, W. F., Crozel-Goudot, V. & Traktman, P. Transient expression of the vaccinia virus DNA polymerase is an intrinsic feature of the early phase of infection and is unlinked to DNA replication and late gene expression. *J. Virol.* **66**, (1992).
- 229. Boyle, K. A., Arps, L. & Traktman, P. Biochemical and Genetic Analysis of the Vaccinia Virus D5 Protein: Multimerization-Dependent ATPase Activity Is Required To Support Viral DNA Replication. *J. Virol.* **81**, (2007).
- Evans, E., Klemperer, N., Ghosh, R. & Traktman, P. The vaccinia virus D5 protein, which is required for DNA replication, is a nucleic acid-independent nucleoside triphosphatase. *J. Virol.* 69, (1995).

- 231. McDonald, W. F., Klemperer, N. & Traktman, P. Characterization of a processive form of the vaccinia virus DNA polymerase. *Virology* **234**, (1997).
- 232. Sèle, C. *et al.* Low-Resolution Structure of Vaccinia Virus DNA Replication Machinery. *J. Virol.* **87**, (2013).
- 233. Katsafanas, G. C. & Moss, B. Linkage of Transcription and Translation within Cytoplasmic Poxvirus DNA Factories Provides a Mechanism to Coordinate Viral and Usurp Host Functions. *Cell Host Microbe* **2**, (2007).
- 234. Vos, J. C. & Stunnenberg, H. G. Derepression of a novel class of vaccinia virus genes upon DNA replication. *EMBO J.* **7**, (1988).
- 235. Keck, J. G., Baldick, C. J. & Moss, B. Role of DNA replication in vaccinia virus gene expression: A naked template is required for transcription of three late trans-activator genes. *Cell* **61**, (1990).
- 236. Gershon, P. D. & Moss, B. Early transcription factor subunits are encoded by vaccinia virus late genes. *Proc. Natl. Acad. Sci. U. S. A.* 87, (1990).
- 237. Yeh, W. W., Moss, B. & Wolffe, E. J. The Vaccinia Virus A9L Gene Encodes a Membrane Protein Required for an Early Step in Virion Morphogenesis. *J. Virol.* **74**, (2000).
- 238. Roberts, K. L. & Smith, G. L. Vaccinia virus morphogenesis and dissemination. *Trends in Microbiology* **16**, (2008).
- 239. Smith, G. L., Vanderplasschen, A. & Law, M. The formation and function of extracellular enveloped vaccinia virus. *Journal of General Virology* **83**, (2002).
- 240. Schmelz, M. *et al.* Assembly of vaccinia virus: the second wrapping cisterna is derived from the trans Golgi network. *J. Virol.* **68**, (1994).
- 241. Tooze, J., Hollinshead, M., Reis, B., Radsak, K. & Kern, H. Progeny vaccinia and human cytomegalovirus particles utilize early endosomal cisternae for their envelopes. *Eur. J. Cell Biol.* **60**, (1993).
- 242. Weisberg, A. S. *et al.* Enigmatic origin of the poxvirus membrane from the endoplasmic reticulum shown by 3D imaging of vaccinia virus assembly mutants. *Proc. Natl. Acad. Sci. U. S. A.* **114**, (2017).
- 243. Liu, L., Cooper, T., Howley, P. M. & Hayball, J. D. From crescent to mature virion: Vaccinia virus assembly and maturation. *Viruses* **6**, (2014).
- 244. Shida, H., Tanabe, K. & Matsumoto, S. Mechanism of virus occlusion into A-type inclusion during poxvirus infection. *Virology* **76**, (1977).
- 245. Okeke, M. I. *et al.* Comparative sequence analysis of A-type inclusion (ATI) and P4c proteins of orthopoxviruses that produce typical and atypical ATI phenotypes. *Virus Genes* **39**, (2009).
- 246. Patel, D. D. & Pickup, D. J. Messenger RNAs of a strongly-expressed late gene of cowpox virus contain 5'-terminal poly(A) sequences. *EMBO J.* **6**, 3787 (1987).
- 247. McKelvey, T. A., Andrews, S. C., Miller, S. E., Ray, C. A. & Pickup, D. J. Identification of the Orthopoxvirus p4c Gene, Which Encodes a Structural Protein That Directs Intracellular Mature Virus Particles into A-Type Inclusions. *J. Virol.* **76**, 11216 (2002).

- 248. Howard, A. R., Weisberg, A. S. & Moss, B. Congregation of Orthopoxvirus Virions in Cytoplasmic A-Type Inclusions Is Mediated by Interactions of a Bridging Protein (A26p) with a Matrix Protein (ATIp) and a Virion Membrane-Associated Protein (A27p). *J. Virol.* **84**, 7592 (2010).
- 249. Firth, C. *et al.* Using Time-Structured Data to Estimate Evolutionary Rates of Double-Stranded DNA Viruses. *Mol. Biol. Evol.* **27**, 2038–2051 (2010).
- 250. de Haven, B. C., Gupta, K. & Isaacs, S. N. The vaccinia virus A56 protein: A multifunctional transmembrane glycoprotein that anchors two secreted viral proteins. *Journal of General Virology* **92**, (2011).
- 251. Zhou, J., Sun, X. Y., Fernando, G. J. P. & Frazer, I. H. The vaccinia virus K2L gene encodes a serine protease inhibitor which inhibits cell-cell fusion. *Virology* **189**, (1992).
- 252. Law, K. M. & Smith, G. L. A vaccinia serine protease inhibitor which prevents virus-induced cell fusion. *J. Gen. Virol.* **73**, (1992).
- 253. Turner, P. C. & Moyer, R. W. An orthopoxvirus serpinlike gene controls the ability of infected cells to fuse. *J. Virol.* **66**, (1992).
- 254. Carpentier, D. C. J., Van Loggerenberg, A., Dieckmann, N. M. G. & Smith, G. L. Vaccinia virus egress mediated by virus protein A36 is reliant on the F12 protein. *J. Gen. Virol.* **98**, (2017).
- 255. Dodding, M. P., Newsome, T. P., Collinson, L. M., Edwards, C. & Way, M. An E2-F12 complex is required for intracellular enveloped virus morphogenesis during vaccinia infection. *Cell. Microbiol.* **11**, (2009).
- 256. Moss, B. Poxvirus DNA replication. Cold Spring Harb. Perspect. Biol. 5, (2013).
- 257. Van Eijl, H., Hollinshead, M. & Smith, G. L. The vaccinia virus A36R protein is a type Ib membrane protein present on intracellular but not extracellular enveloped virus particles. *Virology* **271**, (2000).
- 258. Blasco, R. & Moss, B. Role of cell-associated enveloped vaccinia virus in cell-to-cell spread. *J. Virol.* **66**, (1992).
- 259. Roper, R. L., Wolffe, E. J., Weisberg, A. & Moss, B. The Envelope Protein Encoded by the A33R Gene Is Required for Formation of Actin-Containing Microvilli and Efficient Cell-to-Cell Spread of Vaccinia Virus. J. Virol. 72, (1998).
- 260. Wolffe, E. J., Isaacs, S. N. & Moss, B. Deletion of the vaccinia virus B5R gene encoding a 42kilodalton membrane glycoprotein inhibits extracellular virus envelope formation and dissemination. J. Virol. **67**, (1993).
- 261. Wolffe, E. J., Katz, E., Weisberg, A. & Moss, B. The A34R glycoprotein gene is required for induction of specialized actin-containing microvilli and efficient cell-to-cell transmission of vaccinia virus. *J. Virol.* **71**, (1997).
- 262. Katz, E., Wolffe, E. & Moss, B. Identification of Second-Site Mutations That Enhance Release and Spread of Vaccinia Virus. *J. Virol.* **76**, (2002).
- 263. Blasco, R., Sisler, J. R. & Moss, B. Dissociation of progeny vaccinia virus from the cell membrane is regulated by a viral envelope glycoprotein: effect of a point mutation in the lectin homology domain of the A34R gene. *J. Virol.* **67**, (1993).

- 264. Doceul, V., Hollinshead, M., Van Der Linden, L. & Smith, G. L. Repulsion of superinfecting virions: A mechanism for rapid virus spread. *Science* (80-. ). **327**, (2010).
- 265. McFadden, G., Mohamed, M. R., Rahman, M. M. & Bartee, E. Cytokine determinants of viral tropism. *Nature Reviews Immunology* **9**, (2009).
- 266. McFadden, G., Pace, W. E., Purres, J. & Dales, S. Biogenesis of poxviruses: Transitory expression of Molluscum contagiosum early functions. *Virology* **94**, (1979).
- 267. Li, Y., Yuan, S. & Moyer, R. W. The non-permissive infection of insect (Gypsy Moth) LD-652 cells by vaccinia virus. *Virology* **248**, (1998).
- 268. Zhao, Y. *et al.* Non-replicating Vaccinia Virus TianTan Strain (NTV) Translation Arrest of Viral Late Protein Synthesis Associated With Anti-viral Host Factor SAMD9. *Front. Cell. Infect. Microbiol.* **10**, (2020).
- 269. Bengali, Z. *et al.* Drosophila S2 cells are non-permissive for vaccinia virus DNA replication following entry via low pH-dependent endocytosis and early transcription. *PLoS One* **6**, (2011).
- 270. Johnston, J. B. *et al.* Role of the Serine-Threonine Kinase PAK-1 in Myxoma Virus Replication. *J. Virol.* **77**, (2003).
- 271. Werden, S. J., Rahman, M. M. & McFadden, G. Chapter 3 Poxvirus Host Range Genes. *Advances in Virus Research* **71**, (2008).
- 272. Haller, S. L., Peng, C., McFadden, G. & Rothenburg, S. Poxviruses and the evolution of host range and virulence. *Infection, Genetics and Evolution* **21**, (2014).
- 273. Ramsey-Ewing, A. L. & Moss, B. Complementation of a vaccinia virus host-range K1L gene deletion by the nonhomologous CP77 gene. *Virology* **222**, (1996).
- 274. Spehner, D., Gillard, S., Drillien, R. & Kirn, A. A cowpox virus gene required for multiplication in Chinese hamster ovary cells. *J. Virol.* **62**, (1988).
- 275. Drillien, R., Koehren, F. & Kirn, A. Host range deletion mutant of vaccinia virus defective in human cells. *Virology* **111**, (1981).
- 276. Gillard, S., Spehner, D., Drillien, R. & Kirn, A. Localization and sequence of a vaccinia virus gene required for multiplication in human cells. *Proc. Natl. Acad. Sci. U. S. A.* **83**, (1986).
- 277. Perkus, M. E. et al. Vaccinia virus host range genes. Virology 179, 276–286 (1990).
- 278. Meng, X., Chao, J. & Xiang, Y. Identification from diverse mammalian poxviruses of hostrange regulatory genes functioning equivalently to vaccinia virus C7L. *Virology* **372**, (2008).
- 279. Beattie, E. *et al.* Host-range restriction of vaccinia virus E3L-specific deletion mutants. *Virus Genes* **12**, (1996).
- 280. Chang, H. W., Uribe, L. H. & Jacobs, B. L. Rescue of vaccinia virus lacking the E3L gene by mutants of E3L. *J. Virol.* **69**, (1995).
- 281. Langland, J. O. & Jacobs, B. L. The role of the PKR-inhibitory genes, E3L and K3L, in determining vaccinia virus host range. *Virology* **299**, (2002).
- 282. Shisler, J. L., Isaacs, S. N. & Moss, B. Vaccinia virus serpin-1 deletion mutant exhibits a host

range defect characterized by low levels of intermediate and late mRNAs. *Virology* **262**, (1999).

- 283. Ali, A. N., Brooks, M. A. & Moyer, R. W. The SPI-1 gene of rabbitpox virus determines host range and is required for hemorrhagic pock formation. *Virology* **202**, (1994).
- 284. Drexler, I., Heller, K., Wahren, B., Erfle, V. & Sutter, G. Highly attenuated modified vaccinia virus Ankara replicates in baby hamster kidney cells, a potential host for virus propagation, but not in various human transformed and primary cells. *J. Gen. Virol.* **79**, (1998).
- 285. Meisinger-Henschel, C. *et al.* Introduction of the Six Major Genomic Deletions of Modified Vaccinia Virus Ankara (MVA) into the Parental Vaccinia Virus Is Not Sufficient To Reproduce an MVA-Like Phenotype in Cell Culture and in Mice. *J. Virol.* **84**, (2010).
- 286. Sutter, G. & Moss, B. Nonreplicating vaccinia vector efficiently expresses recombinant genes. *Proc. Natl. Acad. Sci. U. S. A.* **89**, (1992).
- 287. Okeke, M. I., Nilssen, Ø. & Traavik, T. Modified vaccinia virus Ankara multiplies in the rat IEC-6 cells and limited production of mature virions occurs in other mammalian cell lines. *J. Gen. Virol.* **87**, (2006).
- 288. Jordan, I., Horn, D., Oehmke, S., Leendertz, F. H. & Sandig, V. Cell lines from the Egyptian fruit bat are permissive for modified vaccinia Ankara. *Virus Res.* **145**, (2009).
- 289. Meiser, A., Sancho, C. & Krijnse Locker, J. Plasma Membrane Budding as an Alternative Release Mechanism of the Extracellular Enveloped Form of Vaccinia Virus from HeLa Cells. *J. Virol.* **77**, (2003).
- 290. Hughes, A. L., Irausquin, S. & Friedman, R. The evolutionary biology of poxviruses. *Infect. Genet. Evol.* **10**, 50–59 (2010).
- 291. Brennan, G. et al. Molecular Mechanisms of Poxvirus Evolution. MBio 14, (2023).
- 292. Babkin, I. V. & Babkina, I. N. A retrospective study of the orthopoxvirus molecular evolution. *Infect. Genet. Evol.* **12**, 1597–1604 (2012).
- 293. Zehender, G. *et al.* Bayesian reconstruction of the evolutionary history and cross-species transition of variola virus and orthopoxviruses. *J. Med. Virol.* **90**, 1134–1141 (2018).
- 294. Babkin, I. V. & Babkina, I. N. Molecular Dating in the Evolution of Vertebrate Poxviruses. *Intervirology* **54**, 253–260 (2011).
- 295. Babkin, I. V. & Shchelkunov, S. N. Molecular evolution of poxviruses. *Russ. J. Genet.* 2008 448 44, 895–908 (2008).
- 296. Isidro, J. *et al.* Phylogenomic characterization and signs of microevolution in the 2022 multicountry outbreak of monkeypox virus. *Nat. Med.* **28**, 1569–1572 (2022).
- 297. Elde, N. C. *et al.* Poxviruses deploy genomic accordions to adapt rapidly against host antiviral defenses. *Cell* **150**, (2012).
- 298. Grossegesse, M., Doellinger, J., Tyshaieva, A., Schaade, L. & Nitsche, A. Combined proteomics/genomics approach reveals proteomic changes of mature virions as a novel poxvirus adaptation mechanism. *Viruses* **9**, (2017).
- 299. Brennan, G., Kitzman, J. O., Rothenburg, S., Shendure, J. & Geballe, A. P. Adaptive Gene

Amplification As an Intermediate Step in the Expansion of Virus Host Range. *PLoS Pathog.* **10**, (2014).

- 300. Coulson, D. & Upton, C. Characterization of indels in poxvirus genomes. *Virus Genes* **42**, 171–177 (2011).
- 301. Smithson, C., Purdy, A., Verster, A. J. & Upton, C. Prediction of Steps in the Evolution of Variola Virus Host Range. *PLoS One* **9**, e91520 (2014).
- 302. Doty, J. B. *et al.* Isolation and Characterization of Akhmeta Virus from Wild-Caught Rodents (Apodemus spp.) in Georgia . *J. Virol.* **93**, (2019).
- 303. Qin, L., Favis, N., Famulski, J. & Evans, D. H. Evolution of and Evolutionary Relationships between Extant Vaccinia Virus Strains. *J. Virol.* **89**, 1809 (2015).
- 304. Qin, L., Upton, C., Hazes, B. & Evans, D. H. Genomic Analysis of the Vaccinia Virus Strain Variants Found in Dryvax Vaccine. *J. Virol.* **85**, 13049 (2011).
- 305. Smithson, C. *et al.* Two novel poxviruses with unusual genome rearrangements: NY\_014 and Murmansk. *Virus Genes* **53**, 883–897 (2017).
- 306. Qin, L. & Evans, D. H. Genome Scale Patterns of Recombination between Coinfecting Vaccinia Viruses. J. Virol. 88, 5277–5286 (2014).
- 307. Babkin, I. V., Babkina, I. N. & Tikunova, N. V. An Update of Orthopoxvirus Molecular Evolution. *Viruses 2022, Vol. 14, Page 388* 14, 388 (2022).
- 308. Hoffmann, D. *et al.* Out of the Reservoir: Phenotypic and Genotypic Characterization of a Novel Cowpox Virus Isolated from a Common Vole. *J. Virol.* **89**, (2015).
- 309. Gruber, C. E. M. *et al.* Whole genome characterization of orthopoxvirus (Opv) abatino, a zoonotic virus representing a putative novel clade of old world orthopoxviruses. *Viruses* 10, 1. 12 of 12 (2018).
- 310. Guan, H. *et al.* Emergence, phylogeography, and adaptive evolution of mpox virus. *New Microbes New Infect.* **52**, 101102 (2023).
- Forni, D., Molteni, C., Cagliani, R., Clerici, M. & Sironi, M. Analysis of variola virus molecular evolution suggests an old origin of the virus consistent with historical records. *Microb. Genomics* 9, 1–7 (2023).
- 312. European Parliament and Council. Directive 2001/18/EC of the European Parliament and of the Council of 12 March on the deliberate release into the environment of genetically modified organisms and repealing Council Directive 90/220/EEC. 1–39 (2001).
- 313. Wyatt, L. S. *et al.* Marker rescue of the host range restriction defects of modified vaccinia virus Ankara. *Virology* **251**, (1998).
- 314. Liu, R. *et al.* SPI-1 is a missing host-range factor required for replication of the attenuated modified vaccinia ankara (MVA) vaccine vector in human cells. *PLoS Pathog.* **15**, (2019).
- 315. Zwilling, J., Sliva, K., Schwantes, A., Schnierle, B. & Sutter, G. Functional F11L and K1L genes in modified vaccinia virus Ankara restore virus-induced cell motility but not growth in human and murine cells. *Virology* **404**, (2010).
- 316. Peng, C. & Moss, B. Repair of a previously uncharacterized second host-range gene
contributes to full replication of modified vaccinia virus Ankara (MVA) in human cells. *Proc. Natl. Acad. Sci. U. S. A.* **117**, (2020).

- 317. Sutter, G. A vital gene for modified vaccinia virus Ankara replication in human cells. *Proceedings of the National Academy of Sciences of the United States of America* **117**, (2020).
- 318. Erez, N., Wyatt, L. S., Americo, J. L., Xiao, W. & Moss, B. Spontaneous and Targeted Mutations in the Decapping Enzyme Enhance Replication of Modified Vaccinia Virus Ankara (MVA) in Monkey Cells. J. Virol. **95**, (2021).
- 319. Reynolds, M. G., Guagliardo, S. A. J., Nakazawa, Y. J., Doty, J. B. & Mauldin, M. R. Understanding orthopoxvirus host range and evolution: from the enigmatic to the usual suspects. *Curr. Opin. Virol.* **28**, 108–115 (2018).
- 320. Brochier, B. M. *et al.* Use of recombinant vaccinia-rabies virus for oral vaccination of fox cubs (Vulpes vulpes, L) against rabies. *Vet. Microbiol.* **18**, (1988).
- 321. Freuling, C. M. *et al.* The elimination of fox rabies from Europe: Determinants of success and lessons for the future. *Philos. Trans. R. Soc. B Biol. Sci.* **368**, (2013).
- 322. Verheust, C., Goossens, M., Pauwels, K. & Breyer, D. Biosafety aspects of modified vaccinia virus Ankara (MVA)-based vectors used for gene therapy or vaccination. *Vaccine* **30**, (2012).
- 323. Goossens, M., Pauwels, K., Willemarck, N. & Breyer, D. Environmental Risk Assessment of Clinical Trials Involving Modified Vaccinia Virus Ankara (MVA)-Based Vectors. *Curr. Gene Ther.* **13**, (2014).
- 324. Nitsche, A., Kurth, A. & Pauli, G. Viremia in human Cowpox virus infection. *J. Clin. Virol.* **40**, (2007).
- 325. Willer, D. O., Yao, X. D., Mann, M. J. & Evans, D. H. In vitro concatemer formation catalyzed by vaccinia virus DNA polymerase. *Virology* **278**, (2000).
- 326. Hansen, H., Okeke, M. I., Nilssen, Ø. & Traavik, T. Recombinant viruses obtained from coinfection in vitro with a live vaccinia-vectored influenza vaccine and a naturally occurring cowpox virus display different plaque phenotypes and loss of the transgene. *Vaccine* 23, 499– 506 (2004).
- Okeke, M. I., Nilssen, I., Moens, U., Tryland, M. & Traavik, T. In vitro host range, multiplication and virion forms of recombinant viruses obtained from co-infection in vitro with a vaccinia-vectored influenza vaccine and a naturally occurring cowpox virus isolate. *Virol. J.* 6, (2009).
- 328. Sprygin, A. *et al.* Analysis and insights into recombination signals in lumpy skin disease virus recovered in the field. *PLoS One* **13**, (2018).
- 329. Sprygin, A. *et al.* Evidence of recombination of vaccine strains of lumpy skin disease virus with field strains, causing disease. *PLoS One* **15**, (2020).
- 330. Shumilova, I. *et al.* Overwintering of recombinant lumpy skin disease virus in northern latitudes, Russia. *Transbound. Emerg. Dis.* **69**, (2022).
- 331. Vandenbussche, F. *et al.* Recombinant LSDV Strains in Asia: Vaccine Spillover or Natural Emergence? *Viruses* 14, (2022).
- 332. Mayr, A., Hochstein-Mintzel, V. & Stickl, H. Abstammung, Eigenschaften und Verwendung

des attenuierten Vaccinia-Stammes MVA. Infection 3, (1975).

- 333. Cottingham, M. G. & Carroll, M. W. Recombinant MVA vaccines: Dispelling the myths. *Vaccine* **31**, (2013).
- 334. Jordan, I., Horn, D., John, K. & Sandig, V. A genotype of modified vaccinia Ankara (MVA) that facilitates replication in suspension cultures in chemically defined medium. *Viruses* **5**, (2013).
- 335. Burgers, W. A. *et al.* Construction, characterization, and immunogenicity of a multigene modified vaccinia Ankara (MVA) vaccine based on HIV Type 1 subtype C. *AIDS Res. Hum. Retroviruses* 24, (2008).
- 336. Wyatt, L. S., Belyakov, I. M., Earl, P. L., Berzofsky, J. A. & Moss, B. Enhanced cell surface expression, immunogenicity and genetic stability resulting from a spontaneous truncation of HIV Env expressed by a recombinant MVA. *Virology* **372**, (2008).
- 337. Wang, Z. *et al.* Modified H5 promoter improves stability of insert genes while maintaining immunogenicity during extended passage of genetically engineered MVA vaccines. *Vaccine* **28**, (2010).
- 338. Wyatt, L. S. *et al.* Elucidating and Minimizing the Loss by Recombinant Vaccinia Virus of Human Immunodeficiency Virus Gene Expression Resulting from Spontaneous Mutations and Positive Selection. *J. Virol.* **83**, (2009).
- 339. Stoler, N. & Nekrutenko, A. Sequencing error profiles of Illumina sequencing instruments. *NAR Genomics Bioinforma.* **3**, (2021).
- 340. Heather, J. M. & Chain, B. The sequence of sequencers: The history of sequencing DNA. *Genomics* **107**, (2016).
- 341. Van Dijk, E. L., Jaszczyszyn, Y., Naquin, D. & Thermes, C. The Third Revolution in Sequencing Technology. *Trends Genet.* **34**, (2018).
- 342. Cui, J. *et al.* Analysis and comprehensive comparison of PacBio and nanopore-based RNA sequencing of the Arabidopsis transcriptome. *Plant Methods* **16**, (2020).
- 343. Bolger, A. M., Lohse, M. & Usadel, B. Trimmomatic: a flexible trimmer for Illumina sequence data. *Bioinformatics* **30**, 2114–2020 (2014).
- 344. Del Fabbro, C., Scalabrin, S., Morgante, M. & Giorgi, F. M. An extensive evaluation of read trimming effects on illumina NGS data analysis. *PLoS One* **8**, (2013).
- 345. Wingett, S. W. & Andrews, S. FastQ Screen: A tool for multi-genome mapping and quality control. *F1000Research* **7**, 1338 (2018).
- 346. Li, H. & Durbin, R. Fast and accurate short read alignment with Burrows–Wheeler transform. *Bioinformatics* **25**, 1754–1760 (2009).
- 347. Li, H. & Durbin, R. Fast and accurate long-read alignment with Burrows-Wheeler transform. *Bioinformatics* **26**, (2010).
- 348. Antipov, D., Korobeynikov, A., McLean, J. S. & Pevzner, P. A. HybridSPAdes: An algorithm for hybrid assembly of short and long reads. *Bioinformatics* **32**, (2016).
- 349. Koren, S. et al. Hybrid error correction and de novo assembly of single-molecule sequencing

reads. Nat. Biotechnol. 30, (2012).

- 350. Wick, R. R., Judd, L. M., Gorrie, C. L. & Holt, K. E. Unicycler: Resolving bacterial genome assemblies from short and long sequencing reads. *PLoS Comput. Biol.* **13**, (2017).
- 351. Zimin, A. V. et al. The MaSuRCA genome assembler. Bioinformatics 29, (2013).
- 352. Haghshenas, E., Asghari, H., Stoye, J., Chauve, C. & Hach, F. HASLR: Fast Hybrid Assembly of Long Reads. *iScience* 23, (2020).
- 353. Tcherepanov, V., Ehlers, A. & Upton, C. Genome Annotation Transfer Utility (GATU): rapid annotation of viral genomes using a closely related reference genome. *BMC Genomics* **7**, 150 (2006).
- 354. Camacho, C. *et al.* BLAST+: architecture and applications. *BMC Bioinformatics* **10**, 421 (2009).
- 355. Martin, D. P., Murrell, B., Golden, M., Khoosal, A. & Muhire, B. RDP4: Detection and analysis of recombination patterns in virus genomes. *Virus Evolution* **1**, (2015).
- 356. Lole, K. S. *et al.* Full-Length Human Immunodeficiency Virus Type 1 Genomes from Subtype C-Infected Seroconverters in India, with Evidence of Intersubtype Recombination. *Journal of Virology* **73**, 160 (1999).
- 357. Mühlemann, B. *et al.* Diverse variola virus (smallpox) strains were widespread in northern Europe in the Viking Age. *Science* (80-. ). **369**, (2020).
- 358. Gyuranecz, M. *et al.* Worldwide Phylogenetic Relationship of Avian Poxviruses. *J. Virol.* **87**, (2013).
- 359. Pais, F. S. M., Ruy, P. de C., Oliveira, G. & Coimbra, R. S. Assessing the efficiency of multiple sequence alignment programs. *Algorithms Mol. Biol.* **9**, (2014).
- 360. Martin, D. & Rybicki, E. RDP: detection of recombination amongst aligned sequences. *Bioinformatics* **16**, 562–563 (2000).
- Salminen, M. O., Carr, J. K., Burke, D. S. & Mccutchan, F. E. Identification of Breakpoints in Intergenotypic Recombinants of HIV Type 1 by Bootscanning. *AIDS Res. Hum. Retroviruses* 11, (1995).
- 362. Smith, J. M. Analyzing the mosaic structure of genes. *Journal of Molecular Evolution 1992* 34:2 **34**, 126–129 (1992).
- Posada, D. & Crandall, K. A. Evaluation of methods for detecting recombination from DNA sequences: Computer simulations. *Proceedings of the National Academy of Sciences* 98, 13757–13762 (2001).
- 364. Boni, M. F., Posada, D. & Feldman, M. W. An Exact Nonparametric Method for Inferring Mosaic Structure in Sequence Triplets. *Genetics* **176**, 1035–1047 (2007).
- 365. Padidam, M., Sawyer, S. & Fauquet, C. M. Possible Emergence of New Geminiviruses by Frequent Recombination. *Virology* **265**, 218–225 (1999).
- 366. Holmes, E. C., Worobey, M. & Rambaut, A. Phylogenetic evidence for recombination in dengue virus. *Mol. Biol. Evol.* **16**, (1999).

- 367. Gibbs, M. J., Armstrong, J. S. & Gibbs, A. J. Sister-Scanning: a Monte Carlo procedure for assessing signals in recombinant sequences. *Bioinformatics* **16**, 573–582 (2000).
- 368. Ehlers, A., Osborne, J., Slack, S., Roper, R. L. & Upton, C. Poxvirus Orthologous Clusters (POCs). *Bioinformatics* **18**, 1544–1545 (2002).
- 369. McLeod, K. & Upton, C. Virus Databases. in *Reference Module in Biomedical Sciences* (2017). doi:10.1016/b978-0-12-801238-3.95728-3
- Katoh, K. & Standley, D. M. MAFFT Multiple Sequence Alignment Software Version 7: Improvements in Performance and Usability. *Molecular Biology and Evolution* 30, 772–780 (2013).
- Talavera, G. & Castresana, J. Improvement of Phylogenies after Removing Divergent and Ambiguously Aligned Blocks from Protein Sequence Alignments. *Systematic Biology* 56, 564– 577 (2007).
- 372. Emms, D. M. & Kelly, S. OrthoFinder: solving fundamental biases in whole genome comparisons dramatically improves orthogroup inference accuracy. *Genome Biology* **16**, (2015).
- 373. Ogden, T. H. & Rosenberg, M. S. Multiple sequence alignment accuracy and phylogenetic inference. *Syst. Biol.* **55**, (2006).
- 374. Hall, B. G. Comparison of the accuracies of several phylogenetic methods using protein and DNA sequences. *Mol. Biol. Evol.* **22**, (2005).
- 375. Holder, M. & Lewis, P. O. Phylogeny estimation: Traditional and Bayesian approaches. *Nature Reviews Genetics* **4**, (2003).
- 376. Darriba, Di. *et al.* ModelTest-NG: A New and Scalable Tool for the Selection of DNA and Protein Evolutionary Models. *Molecular Biology and Evolution* **37**, 294 (2020).
- 377. Stamatakis, A., Hoover, P. & Rougemont, J. A Rapid Bootstrap Algorithm for the RAxML Web Servers. *Syst. Biol.* **57**, 758–771 (2008).
- 378. Ronquist, F. *et al.* MrBayes 3.2: Efficient Bayesian Phylogenetic Inference and Model Choice Across a Large Model Space. *Systematic Biology* **61**, 539–542 (2012).
- 379. Smithson, C., Kampman, S., Hetman, B. M. & Upton, C. Incongruencies in vaccinia virus phylogenetic trees. *Computation* **2**, (2014).
- 380. Rousseau, C. M. *et al.* Extensive Intrasubtype Recombination in South African Human Immunodeficiency Virus Type 1 Subtype C Infections. *J. Virol.* **81**, (2007).
- 381. Minh, B. Q. *et al.* IQ-TREE 2: New Models and Efficient Methods for Phylogenetic Inference in the Genomic Era. *Mol. Biol. Evol.* **37**, 1530–1534 (2020).
- 382. Mavian, C., Marini, S., Prosperi, M. & Salemi, M. A snapshot of SARS-CoV-2 genome availability up to April 2020 and its implications: Data analysis. *JMIR Public Heal. Surveill.* **6**, (2020).
- 383. Fourment, M. & Gibbs, M. J. PATRISTIC: a program for calculating patristic distances and graphically comparing the components of genetic change. *BMC Evolutionary Biology* **6**, 1 (2006).

- 384. Drummond, A. J. & Rambaut, A. BEAST: Bayesian evolutionary analysis by sampling trees. *BMC Evol. Biol.* **7**, (2007).
- 385. Sagulenko, P., Puller, V. & Neher, R. A. TreeTime: Maximum-likelihood phylodynamic analysis. *Virus Evol.* **4**, (2018).
- 386. To, T. H., Jung, M., Lycett, S. & Gascuel, O. Fast Dating Using Least-Squares Criteria and Algorithms. *Syst. Biol.* **65**, (2016).
- 387. Suchard, M. A. *et al.* Bayesian phylogenetic and phylodynamic data integration using BEAST 1.10. *Virus Evol.* **4**, (2018).
- 388. Rambaut, A., Lam, T. T., Carvalho, L. M. & Pybus, O. G. Exploring the temporal structure of heterochronous sequences using TempEst (formerly Path-O-Gen). *Virus Evol.* **2**, (2016).
- 389. Demaria, P. J. *et al.* Phase 1 open-label trial of intravenous administration of MVA-BNbrachyury-TRICOM vaccine in patients with advanced cancer. *J. Immunother. Cancer* **9**, (2021).
- 390. Kaysser, P., von Bomhard, W., Dobrzykowski, L. & Meyer, H. Genetic diversity of feline cowpox virus, Germany 2000-2008. *Vet. Microbiol.* **141**, (2010).
- 391. Mavian, C. *et al.* The genome sequence of ectromelia virus Naval and Cornell isolates from outbreaks in North America. *Virology* **462–463**, 218–226 (2014).
- 392. Gershon, P. D., Kitching, R. P., Hammond, J. M. & Black, D. N. Poxvirus genetic recombination during natural virus transmission. *J. Gen. Virol.* **70**, (1989).
- 393. Lin, Y.-C. J. & Evans, D. H. Vaccinia Virus Particles Mix Inefficiently, and in a Way That Would Restrict Viral Recombination, in Coinfected Cells. *J. Virol.* **84**, 2432–2443 (2010).
- Chernos, V. I., Antonova, T. P. & Senkevich, T. G. Recombinants between vaccinia and ectromelia viruses bearing the specific pathogenicity markers on both parents. *J. Gen. Virol.* 66, (1985).
- 395. Ball, L. A. High-frequency homologous recombination in vaccinia virus DNA. J. Virol. 61, (1987).
- 396. Fathi, Z., Dyster, L. M., Seto, J., Condit, R. C. & Niles, E. G. Intragenic and intergenic recombination between temperature-sensitive mutants of vaccinia virus. *J. Gen. Virol.* **72**, (1991).
- 397. Christen, L., Seto, J. & Niles, E. G. Superinfection exclusion of vaccinia virus in virus-infected cell cultures. *Virology* **174**, (1990).
- 398. Dobson, B. M. *et al.* Vaccinia virus F5 is required for normal plaque morphology in multiple cell lines but not replication in culture or virulence in mice. *Virology* **456–457**, (2014).
- 399. Dobson, B. M. & Tscharke, D. C. Truncation of gene F5L partially masks rescue of vaccinia virus strain MVA growth on mammalian cells by restricting plaque size. *J. Gen. Virol.* **95**, (2014).
- 400. Morales, I. *et al.* The vaccinia virus F11L gene product facilitates cell detachment and promotes migration. *Traffic* **9**, (2008).
- 401. Zhang, W.-H., Wilcock, D. & Smith, G. L. Vaccinia Virus F12L Protein Is Required for Actin

Tail Formation, Normal Plaque Size, and Virulence. J. Virol. 74, (2000).

402. Atukorale, V. N., Weir, J. P. & Meseda, C. A. Stability of the hsv-2 us-6 gene in the del ii, del iii, cp77, and i8r-g11 sites in modified vaccinia virus ankara after serial passage of recombinant vectors in cells. *Vaccines* **8**, (2020).

Paper I



## Genomic Sequencing and Analysis of a Novel Human Cowpox Virus With Mosaic Sequences From North America and Old World Orthopoxvirus

Diana Diaz-Cánova<sup>1</sup>, Ugo L. Moens<sup>1\*</sup>, Annika Brinkmann<sup>2</sup>, Andreas Nitsche<sup>2</sup> and Malachy Ifeanyi Okeke<sup>3\*</sup>

<sup>1</sup> Molecular Inflammation Research Group, Department of Medical Biology, UIT - The Arctic University of Norway, Tromsø, Norway, <sup>2</sup> Highly Pathogenic Viruses, Centre for Biological Threats and Special Pathogens, WHO Reference Laboratory for SARS-CoV-2 and WHO Collaborating Centre for Emerging Infections and Biological Threats, Robert Koch Institute, Berlin, Germany, <sup>3</sup> Section of Biomedical Sciences, Department of Natural and Environmental Sciences, School of Arts and Sciences, American University of Nigeria, Yola, Nigeria

#### **OPEN ACCESS**

#### Edited by:

Vladimir N. Uversky, University of South Florida, United States

#### Reviewed by:

David Hugh Evans, University of Alberta, Canada Sergei Shchelkunov, State Research Center of Virology and Biotechnology VECTOR (ISTC), Russia

\*Correspondence:

Ugo L. Moens ugo.moens@uit.no Malachy Ifeanyi Okeke malachy.okeke@aun.edu.ng

#### Specialty section:

This article was submitted to Virology, a section of the journal Frontiers in Microbiology

Received: 03 February 2022 Accepted: 24 February 2022 Published: 03 May 2022

#### Citation:

Diaz-Cánova D, Moens UL, Brinkmann A, Nitsche A and Okeke MI (2022) Genomic Sequencing and Analysis of a Novel Human Cowpox Virus With Mosaic Sequences From North America and Old World Orthopoxvirus. Front. Microbiol. 13:868887. doi: 10.3389/fmicb.2022.868887 Orthopoxviruses (OPXVs) not only infect their natural hosts, but some OPXVs can also cause disease in humans. Previously, we partially characterized an OPXV isolated from an 18-year-old male living in Northern Norway. Restriction enzyme analysis and partial genome sequencing characterized this virus as an atypical cowpox virus (CPXV), which we named CPXV-No-H2. In this study, we determined the complete genome sequence of CPXV-No-H2 using Illumina and Nanopore sequencing. Our results showed that the whole CPXV-No-H2 genome is 220,276 base pairs (bp) in length, with inverted terminal repeat regions of approximately 7 kbp, containing 217 predicted genes. Seventeen predicted CPXV-No-H2 proteins were most similar to OPXV proteins from the Old World, including Ectromelia virus (ECTV) and Vaccinia virus, and North America, Alaskapox virus (AKPV). CPXV-No-H2 has a mosaic genome with genes most similar to other OPXV genes, and seven potential recombination events were identified. The phylogenetic analysis showed that CPXV-No-H2 formed a separate clade with the German CPXV isolates CPXV\_GerMygEK938\_17 and CPXV\_Ger2010\_MKY, sharing 96.4 and 96.3% nucleotide identity, respectively, and this clade clustered closely with the ECTV-OPXV Abatino clade. CPXV-No-H2 is a mosaic virus that may have arisen out of several recombination events between OPXVs, and its phylogenetic clustering suggests that ECTV-Abatino-like cowpox viruses form a distinct, new clade of cowpox viruses.

Keywords: poxvirus, phylogenetics, Fennoscandian, Norway, recombination

## INTRODUCTION

Poxvirus is a family of double-stranded DNA viruses that can infect a broad range of hosts, including mammals, birds, reptiles, and insects (International Committee on Taxonomy of Viruses, ICTV<sup>1</sup>). Based on the host, *Poxviridae* is divided into two subfamilies: *Chordopoxvirinae* (poxviruses that infect vertebrates) and *Entomopoxvirinae* (poxviruses that infect insects)

<sup>1</sup>https://talk.ictvonline.org/taxonomy/

(MacLachlan and Dubovi, 2017). Within the subfamily *Chordopoxvirinae*, there is the genus *Orthopoxvirus* (OPXV). They are viruses with large, linear, double-stranded DNA genomes ranging in size from 170 to 250 kbp (Hendrickson et al., 2010).

One of the best-known species among OPXV is Variola virus (VARV), the causative agent of smallpox. It was one of the deadliest viruses in human history and was declared to be successfully eradicated in 1980 after a worldwide smallpox vaccination campaign (Strassburg, 1982). Other members of the OPXV genus also cause human diseases, such as *Cowpox virus* (CPXV), *Monkeypox virus* (MPXV), and vaccinia-like virus (Vora et al., 2015; Reynolds et al., 2018; Diaz, 2021; Silva et al., 2021), but those are zoonotic OPXVs. *Variola virus* is the only OPXV that exclusively infected humans in nature. Among the most studied members of OPXVs, *Vaccinia virus* (VACV) is the prototype species. Several VACV strains were used as smallpox vaccines during the world vaccination campaign (Jacobs et al., 2009).

OPXVs can be further divided into New World and Old World OPXVs according to their endemism. The Old World or African-Eurasian OPXV group contains seven species: VARV, VACV, MPXV, CPXV, Camelpox virus (CMLV), Ectromelia virus (ECTV), and Taterapox virus (TATV). The New World OPXV group comprises three species that are endemic to North America: Raccoonpox virus (RCNV), Volepox virus (VPXV), and Skunkpox virus (SKPV) (Smithson et al., 2017b).

In recent times, the increased number of reported OPXV infections as well as the emergence of new OPXVs or reemergence of existing OPXVs has been reported in several countries across the world (Abrahão et al., 2015; Kalthan et al., 2018). Three novel OPXV species have recently been discovered: *Abatino macacapox virus* (OPXV Abatino) in Italy (Cardeti et al., 2017), *Ahkmeta virus* (AKMV) in Georgia (Gao et al., 2018), and *Alaskapox virus* (AKPV) in the United States (Gigante et al., 2019).

The increasing number of OPXV infections in humans could be due to low population immunity against smallpox after the cessation of smallpox vaccination. The vaccinia-like virus infections were reported in different places and host species (Dumbell and Richardson, 1993; Abrahão et al., 2015; Miranda et al., 2017), including humans (Damaso et al., 2007; Megid et al., 2012). In different countries in Africa, human cases of MPXV infections have been reported (Nakoune et al., 2017; Durski et al., 2018; Yinka-Ogunleye et al., 2019; Alakunle et al., 2020); imported MPXV cases were as well reported in Israel, the United Kingdom and Singapore (Vaughan et al., 2018; Erez et al., 2019; Ng et al., 2019). In Europe, cases of cowpox were reported (Tryland et al., 1998; Kalthoff et al., 2014; Ferrier et al., 2021). The distribution of CPXV is in Eurasia (Chantrey et al., 1999; Wolfs et al., 2002; Laakkonen et al., 2006; Vorou et al., 2008; Popova et al., 2017; Diaz, 2021; Ferrier et al., 2021). The natural reservoirs of CPXV are wild rodents (Chantrey et al., 1999; Kinnunen et al., 2011). CPXV has a wide host spectrum, including humans, monkeys, cats, dogs, horses, and farmed llamas (Tryland et al., 1998; Smith et al., 1999; Girling et al., 2011; Prkno et al., 2017; Diaz, 2021). CPXV's broad range is associated with its large genome, which is the largest

genome among OPXVs (Gubser et al., 2004; Carroll et al., 2011). CPXV is polyphyletic (Carroll et al., 2011; Okeke et al., 2014; Franke et al., 2017; Mauldin et al., 2017), and their strains cluster in at least five clades (Mauldin et al., 2017; Jeske et al., 2019). Among them, some clades are more genetically similar to VACV (VACV-like virus) and VARV (VARV-like virus), whereas other CPXV strains appear as single branches and have a mosaic genome that contains genomic parts from different clades (Franke et al., 2017). The genetic heterogeneity inside CPXV could partially be due to recombination processes with other OPXV species or between CPXV clades (Okeke et al., 2012, 2014; Franke et al., 2017).

A poxvirus was isolated from an 18-year-old man living in the county Nordland, Norway (Hansen et al., 2009). Based on the detection of A-type inclusion (ATI) bodies, the sequence and phylogenetic analysis of hemagglutinin (HA) gene, cytokine response modifier B (crmB) gene, and Chinese hamster ovary host range (CHOhr) genes as well as Hind III restriction map, this virus was classified as a CPXV and was tentatively named CPXV-No-H2 (Hansen et al., 2009; Okeke et al., 2012). This isolate produces an atypical ATI phenotype,  $V^{+/}$ , in which the virions are encrusted only in the periphery of ATI (Okeke et al., 2012). The sequencing of two of the three genes (atip, p4c, and A27L) involved in the production of ATI with virions embedded into ATI (V<sup>+</sup>) (Patel and Pickup, 1987; McKelvey et al., 2002; Howard et al., 2010) showed that it has intact atip and p4c genes. Furthermore, interestingly, the atip gene of CPXV-No-H2 closely related to that of ECTV with a bootstrap support of 100%, whereas the *p4c* gene was more diverse compared to the orthologs in other OPXVs (Okeke et al., 2012, 2014).

In this study, we report the whole sequence and genomic characterization of a Norwegian human CPXV isolate, CPXV-No-H2. We annotated the open reading frames, performed recombination analysis, and determined phylogenetic relationships with other OPXV genomes.

## MATERIALS AND METHODS

## Cell, Virus Culture, and DNA Isolation

The Fennoscandian CPXV No-H2 strain was isolated in 2001 from a human patient from Northern Norway (Hansen et al., 2009; Okeke et al., 2012). CPXV-No-H2 was cultured on a monolayer of Vero cells (ATCC No. CCL-81) in 175-cm<sup>2</sup> flasks (NUNC Sweden) as previously described (Okeke et al., 2012). Viral DNA was extracted from semi-purified virions using QIAGEN Genomic-tip 100/G and QIAGEN Genomic DNA Buffer Set, following the manufacturer's instructions (Qiagen, Hilden, Germany). DNA concentration was measured using NanoDrop 2000 spectrophotometer (Thermo Fischer Scientific<sup>TM</sup>, Waltham, MA, United States).

## Whole-Genome Sequencing

The genome of CPXV-No-H2 was sequenced using Illumina and Oxford Nanopore Technologies (ONT; Oxford, United Kingdom), respectively. The preparation of sequencing libraries and next-generation sequencing with Illumina was performed at the Norwegian Sequencing Centre, Oslo. ThruPLEX DNA-Seq kit with an input DNA of 50 ng was used for the library preparation. Whole-genome sequencing was performed on an Illumina MiSeq instrument (Illumina Inc., San Diego, CA, United States) using MiSeq Reagent v3 (600 cycles), producing 2×300-bp paired-end reads. For nanopore sequencing, sequencing libraries were prepared using the Ligation Sequencing Kit SQK-LSK109 (ONT, Oxford, United Kingdom) and native barcoding expansion kit EXP-NBD104 and EXP-NBD114 (ONT). Up to 14 samples were multiplexed on R9.4 flow cells (FLO-MIN106). The run was performed on GridION X5 (Oxford, United Kingdom) using MinKNOW v20.10.6. Library preparation and nanopore sequencing were performed at the Genomics Support Centre Tromsø at UiT-The Arctic University of Norway.

#### **Genome Assembly**

Raw sequencing data from Illumina MiSeq were evaluated for their quality using FastQC software v0.11.8 (Andrews, 2010). Adapter removal and quality filtering were conducted using Trimmomatic v0.39 (Parameters: ILLUMINACLIP:TruSeq3-PE-2.fa:2:30:10 LEADING:3 TRAILING:3 SLIDINGWINDOW:4:20 MINLEN:36) (Bolger et al., 2014). In order to remove reads corresponding to host cells, filtered reads were mapped against Chlorocebus sabaeus (GCF\_000409795.2) using FastQ Screen v0.14.1 (Wingett and Andrews, 2018) with BWA v.0.7.17 (Li and Durbin, 2009). The remaining reads were used in the genome assembly. Raw nanopore data (fast5 files) were base called using Guppy 4.2.3 in MinKNOW 20.10.6, with a qscore of 7 as filter, to produce Fastq formatted sequence files. Fastq sequences were demultiplexed using Guppy 4.2.3-likewise with barcode removal. Host sequences were filtered out using FastQ Screen v0.14.1 (Wingett and Andrews, 2018) with BWA v.0.7.17 (Li and Durbin, 2009) as described above. SPAdes v3.15.3 (Bankevich et al., 2012) was used to combine the ONT long reads and the Illumina reads to produce a hybrid assembly (with nanopore option and default parameters). Contigs were screened using BLAST<sup>2</sup> to remove host contamination. In order to assemble the complete genome, the Illumina reads were mapped to the contigs using Geneious mapper implemented in Geneious Prime 2020.2.4 (Biomatters, Inc., Newark, NJ, United States). Then, the extended contigs were merged into one by Geneious assembler in Geneious Prime 2020.2.4.

#### **Genome Annotation**

The assembled genome was annotated using Genome Annotation Transfer Utility (GATU) software from the Viral Bioinformatics Resource Centre (Tcherepanov et al., 2006). ECTV Moscow strain (ECTV\_Mos), CPXV Brighton Red strain (CPXV\_Br), and VACV Copenhagen strain (VACV\_Cop) were used as reference genomes. These reference sequences were retrieved from the Viral Orthologous Clusters (VOCs) database (Ehlers et al., 2002). The GATU parameters included open reading frames (ORFs) longer than 30 amino acids, with a maximum overlap of 25%. Gene annotations from the reference genomes were transferred to the CPXV-No-H2 genome when the level of similarity was  $\geq$ 80%. The putative coding sequences (CDS) with low similarity to the reference genes were subjected to a BLASTp analysis against the proteins belonging to the *Poxviridae* family from the NCBI database. Putative CDS with high similarity to other poxviruses were annotated. Similarly, the unassigned ORFs were investigated using BLASTp searches to find orthologous genes. In cases where more than one CDS were found in the same genomic region, the CDS with the highest similarity was selected. Geneious Prime 2020.2.4 was used to visualize, edit, and correct the annotations, if needed.

#### **Phylogenetic Analysis**

For phylogenetic analysis, 75 OPXV genomes were retrieved from the VOCs database (Ehlers et al., 2002), except for CPXV\_GerMygEK938\_17, which was retrieved from GenBank. The OPXV genomes used in this study are listed in Supplementary Table 1. The alignments of (1) the genomes, excluding the inverted terminal repeats (ITRs; called core genome), (2) the genomic region from the first gene until the last gene (referred to as the whole genome), and (3) the orthologous genes of the 76 OPXVs (including CPXV-No-H2) were performed using MAFFT v1.4.0 (with default parameters; Katoh and Standley, 2013) implemented in Geneious Prime 2020.2.4. The poorly aligned positions were removed from the alignments (1 and 2) with Gblocks 0.91b using default parameters (Talavera and Castresana, 2007). The orthologous genes were identified using OrthoFinder v2.5.2 (Emms and Kelly, 2015). The orthologs (present in  $\geq$  95% of the genomes) were aligned as described above and concatenated in Geneious Prime 2020.2.4.

The phylogenetic relationship among these OPXVs was inferred by the maximum likelihood (ML) and Bayesian inference (BI) methods. ML trees were constructed in RAxML v.8.2.12 (Stamatakis, 2014) using the best-fitting nucleotide substitution model and 1,000 bootstrap replicates. The best-fit nucleotide substitution model for the alignment data was selected using the modelTest-NG v.0.1.6 (Darriba et al., 2020). BI analyses were performed using MrBayes v.3.2.7 (Ronquist et al., 2012) under the best-fitting substitution model with the following parameters: 2 million generations, nchains = 4, samplefreq = 500, and burninfrac = 0.25. The phylogenetic trees were visualized using FigTree v1.4.4 (Rambaut, 2018).

#### Gene Content Comparison

Predicted CDS from isolate CPXV-No-H2 were extracted, translated into amino acid sequences, and compared to the CPXV\_Br, ECTV\_Mos, or VACV\_Cop proteins using BLASTp (ncbi-blast+ v2.11.0) (Camacho et al., 2009). To find the closest annotated proteins for all predicted CPXV-No-H2 CDS, every translated CPXV-No-H2 CDS was analyzed by BLASTp search against proteins of the *Poxviridae* family. A BLASTn identity analysis was performed on predicted CPXV-No-H2 CDS that encode proteins with a higher identity to other OPXV proteins than CPXV proteins. When the first hit in BLASTp or BLAStn was CPXV-No-H2 protein or genome, the second hit was used.

<sup>&</sup>lt;sup>2</sup>https://blast.ncbi.nlm.nih.gov/Blast.cgi

# Investigation of Potential Recombination Events

The genome sequence of CPXV-No-H2 was examined for potential recombination events using recombination detection program 4 (RPD4) (Martin et al., 2015) and SimPlot v3.5.1 (Lole et al., 1999). A putative recombinant event was taken into account if it was identified by RDP4 and/or Simplot analysis and the sequence was most similar to the possible minor parental. The whole genome of CPXV-No-H2 was aligned to other OPXV genomes used as putative parentals (AKPV, CPXV\_Gri, CPXV\_GerMygEK938\_17, ECTV\_Mos, MPXV\_Zaire, and VACV\_LC16m8), with MAFFT v1.4.0 (Katoh and Standley, 2013) implemented in Geneious Prime 2020.2.4. Gaps were not removed from the multiple alignments. Similarity plots were performed on the multiple alignments using the SimPlot program (Lole et al., 1999) with default settings. Putative recombination breakpoints were determined by maximization of  $\chi^2$  analysis (Lole et al., 1999; Lim et al., 2011). For recombination analysis with RPD4, seven methods [RDP (Martin and Rybicki, 2000), GENECONV (Padidam et al., 1999), Bootscan (Martin et al., 2005), MaxChi (Smith, 1992), Chimaera (Posada and Crandall, 2001), SiScan (Gibbs et al., 2000), and 3Seq (Boni et al., 2007)] were used to detect potential recombination events. RDP4 was used with the default parameters, except for the option "require topological evidence." The recombination events that were identified by 6 of 7 methods with significant *p*-values ( $p \le 0.01$ ) were considered potential recombinant events. The beginning and end of the breakpoints of these events suggested by RPD4 were used to identify the potential recombinant sequence. When the breakpoints were not identified by RDP4, the range of positions of the breakpoints obtained by Simplot analysis was used. Those potential recombinant sequences were utilized to build an ML tree using RAxML v.8.2.12 (Stamatakis, 2014). Phylogenetic tree incongruence was further used to map potential recombination sequences. Furthermore, a BLASTn identity analysis was performed on those potential recombinant sequences.

## RESULTS

## Genome Assembly and Genome Annotation

Two large contigs (>1000 bp) were obtained with the hybrid assembly and after removing the host contamination. The average coverage of the major and minor contig was 1502X and 735X, respectively. The mean genomic coverage of CPXV-No-H2 was 1370X. The assembled whole-genome length of CPXV-No-H2 was 220,276 bp. The ITR regions were approximately 7 kbp, and the central region was 206,204 bp. The A+T content of the CPXV-No-H2 genome was 66.6%. Genome annotation predicted 217 potential genes in the CPXV-No-H2 genome (**Figure 1** and **Supplementary Table 2**). The overlapping genes were excluded from the annotation process. However, there were 20 predicted overlapping genes (**Supplementary Table 3**). Some of them were homologs of CPXV\_Br genes (*CPXV004*,

*CXPV47*, *CPXV51A*, *CPXV058*, *CPXV078A*, *CPXV096*, *CPXV116*, *CPXV119A*, *CPXV130*, *CPXV152A*, *CPXV160*, *CPXV170*, and *CPXV214*). The whole genome sequence is deposited in GenBank with accession number OM460002.

## **Phylogenetic Analysis**

The phylogenetic analysis showed that the ML tree topologies were similar to the phylogenetic trees generated by the BI method, regardless of the alignments used. The BI phylogenetic trees had strong posterior probabilities in most nodes ( $\geq 0.95$ ) (Figures 2-4). Unlike the BI trees, the ML trees had low clade support (<70%) in some of the nodes (Supplementary Figures 2-4). The BI phylogenetic trees of 76 OPXV whole genomes, 76 OPXV core genomes, and 134 OPXV orthologous genes are shown in Figures 2-4, respectively. The Old World and New World OPXV were separated into two groups in the phylogenetic trees generated from 76 OPXV whole genomes (Figure 2), 76 OPXV core genomes (Figure 3), and 134 OPXV orthologous genes (Figure 4). Within the Old World OPXV, the strains from the same OPXV species were grouped into clusters, except for CPXV strains that formed more than one cluster. CPXV was divided into clusters: CPXV-like 1, CPXV-like 2, VARV-like, VACV-like, and new clade (Franke et al., 2017). Although the strains of VACV-like did not form a proper cluster, they were closely related VACV (Figures 2-4).

The new clade comprised CPXV-No-H2 and two CPXV isolates: CPXV\_GerMygEK938\_17 and German CPXV\_Ger2010\_MKY (posterior probabilities of 1.0 and bootstrap values of 100%) (Figures 2-4 and Supplementary Figures 2-4). The CPXV-No-H2 genome was most similar to the CPXV\_GerMygEK\_938\_17 genome (96.38% identical), and the second most similar virus was CPXV\_Ger2010\_MKY (96.26% identical), based on the alignment of 76 OPXV whole genomes. The new clade was closely related to the ECTV/Abatino clade. Both clades formed a major clade together (posterior probabilities of 1.0 and bootstrap values > 89%) (Figures 2-4 and Supplementary Figures 2-4). In this study, the new clade (CPXV-No-H2/CPXV\_GerMygEK938\_17/ CPXV\_Ger2010\_MKY) was tentatively named "ECTV-Abatino-like."

In phylogenetic trees derived from the 134 OPXV orthologous genes, the ECTV-Abatino-like/ECTV/OPXV Abatino clade clustered with CPXV\_Ger1998/CPXV-like 2 clade with a strong posterior probability (1.0), but with a low bootstrap support value (46%) (Figure 4 and Supplementary Figure 4), whereas the phylogeny of the 76 OPXV whole and core genomes showed that the ECTV-Abatino-like/ECTV/OPXV Abatino clade was separated from the other Old World OPXV, which formed a major polyphyletic clade (posterior probability of 1.0 and bootstrap values > 81%) (Figures 2, 3 and Supplementary Figures 2, 3). This major polyphyletic clade was further resolved in two groups: the CPXV\_Ger1998/CPXV-like 2 clade (posterior probability of 1.0 and bootstrap values of 100%) and a larger group containing CPXV-like 1, VARV-like, VARV-TATV-CMLV, CPXV\_HumLit08, VACV-like, MPXV, RPXV, and VACV clades (posterior probabilities of 1.0 and bootstrap values of 100%) (Figures 2, 3 and Supplementary Figures 2, 3). The clustering

1 2,000 4,000 6,000 8,000 10,000 12,000 14,000 16,000 18,000 20,000 22,000 24,000 26,000 28,000 30,000 32,000 36,000 36,000 36,000 40,000 42,000 40,0
NoH2-002 NoH2-007 NoH2-011 NoH2-013 NoH2-017 NoH2-020 NoH2-023 NoH2-028 NoH2-038 No
NeH2-043 NeH2-046 NeH2-046 NeH2-050 NeH2-050 NeH2-055 NeH2-056 NeH2-066 NeH2-066 NeH2-066 NeH2-066 NeH2-068 NeH2-076 NeH2-075 NeH2-075 NeH2-076 NeH2-081 NeH2-082 NeH2-084 NeH2-086 NeH2-066 NeH2-068 NeH2-068 NeH2-076 NeH2-073 NeH2-076 NeH2-076 NeH2-080 NeH2-082 NeH2-084 NeH2-086 NeH2-086 NeH2-067 NeH2-077 NeH2-077 NeH2-077 NeH2-076 NeH2-080 NeH2-083 NeH2-084 NeH2-086 NeH2-086 NeH2-068 NeH2-067 NeH2-077 NeH2-077 NeH2-077 NeH2-076 NeH2-080 NeH2-083 NeH2-086 NeH2-086 NeH2-086 NeH2-068 NeH2-076 NeH2-076 NeH2-076 NeH2-080 NeH2-083 NeH2-083 NeH2-086 NeH2-086 NeH2-086 NeH2-086 NeH2-087 NeH2-077 NeH2-077 NeH2-077 NeH2-077 NeH2-076 NeH2-080 NeH2-083 NeH2-086 NEH
In N NoH2-105 N. NoH2-110 NoH2-111 N. NoH2-118 NoH2-119 N. NoH2-124 N. N. NoH2-110 N. N. NoH2-110 N. N. NoH2-110 N.
NoH2-137 M IoH No NoH2-152 NoH2-153 N
NoH2-187 NoH2-187 NoH2-190 NoH2-195 NoH2-195 NoH2-195 NoH2-195 NoH2-200 NoH2-203 NoH2-215 NoH2-206 NoH2-208 NoH2-210 NoH2-211 NoH2-212 NoH2-214 NoH2-216 NoH2-216 NoH2-218 NoH2-218 NoH2-218 NoH2-218 NoH2-216 NoH2-207 NoH2-207 NoH2-207 NoH2-217
FIGURE 1   Genome map of CPXV-No-H2. Localization of 217 predicted coding sequences (CDS) and nine putative recombination events in the CPXV-No-H2 genome. Green blocks represent the putative recombination events. Other colors were used to visualize the amino acid sequence similarity between translated CDS to other OPXV proteins: blue blocks represent CDS with a higher similarity to <i>Alaskapox virus</i> proteins, yellow blocks represent CDS with a higher similarity to <i>Ectromelia virus</i> (ECTV) proteins, orange blocks represent CDS with a higher similarity to <i>Vaccinia virus</i> (VACV) proteins, and fuchsia block represents the CDS with a higher similarity to <i>Vaccinia virus</i> (VACV) proteins, and fuchsia block represents the CDS with a higher similarity to <i>Pace virus</i> proteins.

within this monophyletic group apparently differs between the tree based on 76 OPXV whole genomes and the trees built from 76 OPXV core genomes and 134 OPXV orthologous genes (Figures 2-4 and Supplementary Figures 2-4). In the former, CPXV-like 1 branches separated from other members of the large polyphyletic group (Figure 2 and Supplementary Figure 2). These members formed a cluster and were further split into two clusters: the VARV-like/TATV/CMLV/VARV cluster and the CPXV\_HumLit08/VACV-like/MPXV/RPXV/VACV cluster. Both clusters were supported by strong posterior probabilities (1.0) and bootstrap values (100%) (Figure 2 and Supplementary Figure 2), while 76 OPXV core genomes and 134 OPXV orthologous gene phylogenies grouped CPXV-like 1 into the same cluster with VARV-like/TATV/CMLV/VARV, with posterior probabilities of 0.99 and 1.0 and bootstrap values of 51 and 99%, respectively (Figures 3, 4 and Supplementary Figures 3, 4). Additionally, CPXV\_HumLit08, VACV-like, MPXV, RPXV, and VACV were grouped into the same cluster, with posterior probabilities of 1.0 and bootstrap values of 100%.

However irrespective of the aforementioned differences between the whole genome tree on one hand and the core genome and the concatenated 134 orthologous genes on the other, the following topologies were consistent in all the trees generated from the three distinct datasets: (i) ECTV-Abatino-like CPXV clustered closely with ECTV-OPXV Abatino clade, (ii) VACVlike CPXV grouped together with VACV, (iii) VARV-like CPXV clustered closely with VARV-TATV-CMLV clade, (iv) CPXV-like 1 clade is sister to VACV-like clade, and (vi) AKPV/AKMV are intermediate between Old World and New World OPXV.

#### Gene Content Comparison

The gene content and organization of the CPXV-No-H2 genome were similar to that of the CPXV\_Br and ECTV\_Mos genomes. All CPXV\_Br genes (excluding ITR genes) were found in the CPXV-No-H2 genome, except for *CPXV221* (encodes CrmD protein) and *CPXV192* (encodes CPXV192 protein).

The last gene is truncated in CPXV-No-H2 and overlapped to a major predicted gene. Similarly, comparing CPXV-No-H2 and ECTV\_Mos, it was shown that *EVM003/170* (homolog to *CPXV221*) was missing in the CPXV-No-H2 genome. Additionally, the *EVM006* gene (encodes C-type lectin) was absent in the CPXV-No-H2 genome.

The predicted gene *NoH2-154* encodes an intact p4c protein compared to CPXV\_Br, whose *p4c* gene is disrupted in two fragments (*CPXV159* and *CPXV161*). Similarly, this gene is fragmented in ECTV\_Mos (Chen et al., 2003). The BLASTp analysis for NoH2-154 revealed that the best hit was an inclusion protein III from *Buffalopox virus*, with 87.7% identity. This protein (501 aa) was smaller than the p4c protein from CPXV-No-H2 (512 aa). The next best BLASTp hits were longer proteins of 527 aa from CPXV\_Ger2010\_MKY and 523 aa from CPXV\_GerMygEK938\_17, which shared 88.6 and 89.12% identity with p4c protein from CPXV-No-H2, respectively. BLASTn showed that the CPXV-No-H2 *p4c* gene was most similar to the *p4c* gene from CPXV\_GerMygEK938\_17.

Within ITRs of CPXV-No-H2, five of eight duplicate CPXV\_Br genes were found (*CPXV003/227*, *CPXV005/226*, *CPXV006/225*, *CPXV007/224*, and *CPXV008/223*). The terminal *CPXV004* gene was also found in both ITRs of CPXV-No-H2 (*NoH2-A* and *NoH2-T*) (**Supplementary Table 3**), but they overlapped two major predicted genes (*NoH2-002* and *NoH2-216*). Interestingly, *NoH2-006*, the ortholog of *CPXV009/222*, was found as a single copy downstream of the left ITR of the CPXV-No-H2 genome (**Figure 1**).

All predicted genes in CPXV-No-H2 were found to have homologs in either CPXV\_Br, ECTV\_Mos, or VACV\_Cop, except for *NoH2*-008 and *NoH2-212*. The translated *NoH2-008* CDS shared 100% amino acid identity with the hypothetical protein CPXV0285 of CPXV\_FM2292 (CRL86746.1) and CPXV\_Ger2007\_Vole (SBN49117.1). The predicted gene *NoH2-212* was a homolog of *CPXV-GRI-K3R* (encodes CrmE protein). The BLASTp analysis of this translated CDS showed







that it shared the highest amino acid identity (95.2%) with a CPXV\_GerMygEK938\_17 protein (hypothetical protein pCPXV003 CAB5514210.1). The *NoH2-212* gene was located upstream of the right ITR of CPXV-No-H2 (**Figure 1**).

Of the 217 predicted genes of CPXV-No-H2, 17 coded for proteins that were most similar to other OPXV proteins than CPXV proteins. Seven of them shared high similarity to North American OPXV proteins, AKPV, and 10 genes were most similar to Old World OPXV proteins, including ECTV and VACV (Supplementary Table 4). The seven predicted CPXV-No-H2 proteins were most similar (i.e., >92% amino acid identity) to AKPV proteins, including NoH2-079, NoH2-165, NoH2-166, NoH2-167, NoH2-174, NoH2-175, and NoH2-210. The BLASTn analysis of their seven predicted CPXV-No-H2 genes revealed that NoH2-079, NoH2-165, NoH2-166, NoH2-167, NoH2-174, and NoH2-210 shared the highest similarity (i.e., > 97% nucleotide identity) with AKPV-076, AKPV-162, AKPV-163, AKPV-164, AKPV-171, and AKPV-203, respectively, whereas NoH2-175 shared the highest nucleotide similarity with CPXV\_GerMygEK938\_17/CPXV\_Ger2010\_MKY. However, the BLASTn analysis of NoH2-175 with the intergenic region between NoH2-174 and NoH2-175 revealed the highest similarity with AKPV (93.98% nucleotide identity).

The six predicted proteins most identical (i.e., > 94% amino acid identity) to ECTV proteins were NoH2-152, NoH2-153, NoH2-163, NoH2-171, NoH2-172, and NoH2-173. At the nucleotide level, *NoH2-152*, *NoH2-153*, *NoH2-171*, *NoH2-172*, and *NoH2-173* had > 95% identity with the

corresponding ECTV *EVM127*, *EVM128*, *EVM140*, *EVM141*, and *EVM142* genes. The *NoH2-163* gene, however, was most similar to *CPXV169* from CPXV\_GerMygEK938\_17 and CPXV\_Ger2010\_MKY (98.6% identity), whereas the next best BLASTn hit was an ECTV gene with 98.4% identity. The difference between their percent identities was due to one identical nucleotide (**Supplementary Figure 1**).

The three CPXV-No-H2 predicted proteins most similar to VACV proteins included NoH2-090, NoH2-159, and NoH2-160. The BLASTn search of these predicted genes revealed that *NoH2-159* shared 100% nucleotide identity with VACV, BPXV, and CPXV genomes, and *NoH2-160* was 98.4% identical to VACV LC16m8 (*m8197R*) and VACV LC16mO genes (*mO197R*). The predicted protein of the gene *NoH2-077* was 100% identical to ECTV, HSPV, and VACV proteins. However, the BLASTn of this predicted gene showed that it was 100% identical to CPXV\_GerMygEK938\_17 genome, but this region was not annotated.

Overlapping genes were excluded from the annotation process. There were 20 overlapping predicted genes (**Supplementary Table 3**). Fourteen of them were homologs of CPXV\_Br (*CPXV004*, *CXPV47*, *CPXV51A*, *CPXV058*, *CPXV078A*, *CPXV096*, *CPXV116*, *CPXV119A*, *CPXV130*, *CPXV152A*, *CPXV160*, *CPXV170*, and *CPXV214*). Another six overlapping genes did not correspond to any annotated CPXV gene. The BLASTp analysis of the protein encoded by the six overlapping genes revealed that five shared the highest similarity (> 83% amino acid identity) to CMLV\_0408151v (NoH2-B), OPXV Abatino (NoH2-H), VACV\_CEyV1 (NoH2-G and NoH2-N), or VACV\_Lister (NoH2-R) proteins (**Supplementary Table 3**).

#### **Recombination Analysis**

Previous studies by our group had identified a putative crossover event downstream of the atip gene (Okeke et al., 2012). Consequently, the complete CPXV-No-H2 genome was examined for recombination because it contained genomic regions with predicted genes similar to AKPV, ECTV, or VACV genomes. Nine putative recombination events were predicted by RDP4 and Simplot analysis for the CPXV-No-H2 genome (Table 1 and Figure 1). Six potential recombination regions were a result of recombination events between the parentals of AKPV and CPXV (putative recombination events 1-6), two originated from recombination events between the parental ECTV and CPXV (putative recombination events 7 and 8), and one was a product of a recombination event between the parental VACV and CPXV (putative recombination event 9) (Table 1). Within the nine putative recombinant regions in CPXV-No-H2, only one recombinant region (putative recombination event 6) was close to terminal regions, whereas the other eight recombinant regions were located in the central region of the genome.

The first potential recombinant region in the CPXV-No-H2 genome (putative recombination event 1) comprised the *NoH2-079* gene and started from position 76,946 bp in the CPXV-No-H2. The ending breaking could be between positions 77,201 and 77,208 bp in the CPXV-No-H2 genome based on Simplot analysis. The next potential recombinant region (putative recombination event 2) was almost 500 bp downstream of the first one. It was located between 77,741 and 78,243 bp in the CPXV-No-H2 genome and contained parts of *NoH2-080* and *NoH2-081*. These two putative recombinant regions shared the highest similarity to the AKPV genome (>98% identical) (**Supplementary Table 5**).

The third potential recombinant region (putative recombination event 3) spanned approximately 4,500 bp, from position 150,156 to 154,530 bp in the CPXV-No-H2 genome. However, it overlapped with the predicted recombinant region between the parental ECTV and CPXV (putative recombination event 7), located between 150,119 and 153,968 bp in the CPXV-No-H2 genome. The latter encompassed only two genes, *NoH2-152* and *No-153*, compared to the former that also contained part of the *NoH2-154* gene. The BLASTn analysis of the third potential recombinant region revealed the highest similarity with the AKPV genome (96.89% identical), whereas the putative recombinant region between the parental ECTV and CPXV was most similar to the ECTV genomes, with 97.93% nucleotide identity (**Supplementary Table 5**).

The fourth potential recombinant region in the CPXV-No-H2 genome (putative recombination event 4) included the genes *NoH2-165*, *NoH2-166*, and *NoH2-167* and part of *NoH2-168*. The Simplot analysis revealed that the beginning and ending breakpoints were located between 160,774 and 160,878 bp and between 162,909 and 162,948 bp in the CPXV-No-H2 genome, respectively. This genomic region was most similar to the AKPV genome, sharing 97.66% nucleotide identity (**Supplementary Table 5**). The fifth potential recombinant region

(putative recombination event 5) started from 165,874 to 168,063 bp in the CPXV-No-H2 genome. It overlapped with another putative recombinant region between the parental ECTV and CPXV (putative recombination event 8), which was located between 165,847 and 167,892 bp in the CPXV-No-H2 genome. Both regions contained part of *NoH2-171*, *NoH2-172*, *NoH2-173*, and *NoH2-174* and part of *NoH2-175*. The BLASTn analysis of these two putative recombination regions revealed that the first hit was the AKPV genome, with > 97% nucleotide identity (**Supplementary Table 5**).

A sixth potential recombinant event between the parental AKPV and CPXV (putative recombination event 6) was detected only by Simplot analysis. The cross-over points lay between 204,960 and 204,977 bp and between 209,488 and 209,901 bp in the CPXV-No-H2 genome. It contained a major part of the *NoH2-210* gene, which was most similar to AKPV-203 (97.15% identical) and also shared similarity with the Murmansk-007 gene (91.44% identical). Furthermore, this putative recombinant sequence showed its highest identity with the AKPV genome (98.4% identical), followed by the *Murmansk microtuspox virus* genome (91.44% identical).

One putative recombination event between the parental VACV and CPXV (putative recombination event 9) was detected. The breakpoints were undetermined by RDP4, but the Simplot analysis revealed that the putative recombinant sequence started from position 164,400–164,525 bp and ended at position 164,756–164,768 bp in the CPXV-No-H2 genome. This region contained a small part of *NoH2-169* and a major part of *NoH2-170*. The latter gene shared 94.44% identity with the genes of CPXV and RPXV and the VACV strains, such as Lister, Cantagalo, CVA, and NYCBH.

The phylogenetic analysis of the six putative recombinant regions between the parental AKPV and CPXV showed that CPXV-No-H2 clustered with AKPV with a bootstrap support of > 91%, except for the phylogenetic tree based on the fifth putative recombinant region (165,874–168,063 bp in the CPXV-No-H2 genome), where CPXV-No-H2 clustered with ECTV with a low bootstrap support (55%), and they were grouped with AKPV (bootstrap value of 100%) (**Supplementary Figures 5–10**). CPXV-No-H2 likewise clustered with ECTV in the phylogenetic tree generated from the potential recombinant region between the parental ECTV and CPXV (165,847–167,892 bp in the CPXV-No-H2 genome) that overlapped the fifth putative recombinant region (**Supplementary Figure 12**). Unlike the previous phylogenetic tree, the bootstrap support for this clade was higher (93%) though.

Based on the phylogenetic analysis of the putative recombinant sequence between the parental ECTV and CPXV (150,119–153,968 bp in the CPXV-No-H2 genome), CPXV-No-H2 formed a cluster with ECTV (**Supplementary Figure 11**). This cluster was most closely related to AKPV and formed a major clade, with AKPV and AKMV, separating them from other Old World OPXV. However, the phylogenetic tree of the recombinant region between the parental AKPV and CPXV (150,156–154,530 bp in the CPXV-No-H2 genome), which overlapped that recombinant region, clustered CPXV-No-H2 with AKPV, and both isolates were closely related to ECTV

TABLE 1 Predicted recombination events in the CPXV-No-H2 genome using recombination detection program 4 (RPD4) and Simplot analysis.

	s Major parental	Minor parental	Recombinant virus	Recombination event		RDP4	Simplot Breakpoint interval in CPXV-No-H2		
Putative parental strains					Breakpoint in CPXV-No-H2				Recombination detection programs
					Begin (bp)	End (bp)		Begin (bp)	End (bp)
AKPV, CPXV_GerMygEK938_17, CPXV_Gri, CPXV-No-H2	CPXV_GerMygEK938_17	AKPV	CPXV-No-H2	1	76,946	77,244*	RDP, GENECONV, Bootscan, MaxChi, Chimaera, 3Seq	76,679–76,957	77,201–77,208
	CPXV_GerMygEK938_17	AKPV	CPXV-No-H2	2	77,741	78,243	RDP, GENECONV, Bootscan, MaxChi, Chimaera, 3Seq	77,717–77,765	78,237–78,399
	CPXV_GerMygEK938_17	AKPV	CPXV-No-H2	3	150,156	154,530	GENECONV, Bootscan, MaxChi, Chimaera, SiScan 3Seq	150041–150158 ,	154,524–154,570
	CPXV_GerMygEK938_17	AKPV	CPXV-No-H2	4	160,988*	162,917*	RDP, GENECONV, Bootscan, MaxChi, Chimaera, SiScan, 3Seq	160,774–160,878	162,909–162,948
	CPXV_GerMygEK938_17	AKPV	CPXV-No-H2	5	165,874	168,063	RDP, GENECONV, Bootscan, MaxChi, Chimaera, SiScan, 3Seq	165,828–165,878	168,042–168,066
	CPXV_GerMygEK938_17	AKPV	CPXV-No-H2	6	-	-	-	204,960-204,977	209,498–209,901
ECTV_Mos, CPXV_GerMygEK938_17, CPXV_Gri, CPXV-No-H2	CPXV_GerMygEK938_17	ECTV_Mos	CPXV-No-H2	7	150,119	153,968	GENECONV, Bootscan, MaxChi, Chimaera, SiScan 3Seq	149,993–150,158 ,	153,952–154,180
	CPXV_GerMygEK938_17	ECTV_Mos	CPXV-No-H2	8	165,847	167,892	RDP, GENECONV, Bootscan, MaxChi, Chimaera, SiScan, 3Seq	165,678–165,855	167,879–167,943
VACV_LC16m8, CPXV_GerMygEK938_17, CPXV_Gri, CPXV-No-H2	CPXV_GerMygEK938_17	VACV_LC16m8	CPXV-No-H2	9	164,419*	165,036*	RDP, Bootscan, MaxChi, Chimaera, SiScan, 3Seq	164,399–164,525	164,756–164,768

The breakpoint that was undetermined is marked with an asterisk. AKPV, Alaskapox virus; CPXV, Cowpox virus; ECTV, Ectromelia virus; VACV, Vaccinia virus. The breakpoint that was undetermined is marked with an asterisk.

(**Supplementary Figure 7**). The phylogenetic tree based on the putative recombinant sequence between the parental VACV and CPXV placed CPXV-No-H2 inside the VACV cluster (**Supplementary Figure 13**).

#### DISCUSSION

CPXV-No-H2 is an isolate from a human in Northern Norway that was classified as an atypical CPXV based on ATI phenotype, sequence of the atip and p4c genes, and Hind III restriction map (Hansen et al., 2009; Okeke et al., 2012). Our phylogeny analysis indicated that CPXV-No-H2 is most closely related to the German CPXV isolates CPXV\_GerMygEK938\_17 CPXV\_Ger2010\_MKY and (Figures 2-4). Similarly, phylogenetic analysis based on the HA gene also resolved CPXV\_Ger2010\_MKY and CPXV-No-H2 in the same cluster (Kalthoff et al., 2014). The three CPXV isolates (CPXV\_GerMygEK938\_17, CPXV\_Ger2010\_MKY, and CPXV-No-H2) may be part of a novel CPXV lineage separated from the other CPXV strains. It was previously suggested that CPXV\_Ger2010\_MKY and CPXV\_GerMygEK938\_17 were part of a new cluster provisionally called CPXV-like 3 (Franke et al., 2017; Jeske et al., 2019). However, this cluster was supported by a low bootstrap value (Jeske et al., 2019). The phylogenetic analysis reported in our study indicated that the new clade (CPXV-No-H2/CPXV\_GerMygEK938\_17/ CPXV\_Ger2010\_MKY) was more closely related to ECTV and OPXV Abatino than other OPXVs, with strong posterior probabilities and bootstrap values (Figures 2-4 and Supplementary Figures 2-4). Thus, we tentatively named this clade as "ECTV-Abatino-like."

The ECTV-Abatino-like/ECTV/OPXV Abatino clade was separated from the Old World OPXV in 76 OPXV wholeand core-genome phylogenetic trees, while a phylogenetic tree based on 134 OPXV orthologous genes showed that this clade clustered closely with CPXV\_Ger1998/CPXV-like 2 but with poor bootstrap support (46%). We suggest that the separation of ECTV-Abatino-like/ECTV/OPXV Abatino from the other Old World OPXV may be due to the presence of some genes (or genomic regions) located in the core genome, which are not included within the 134 OPXV orthologous genes. A previous study showed that CPXV\_GerMygEK938\_17/ CPXV\_Ger2010\_MKY/ECTV/OPXV Abatino clustered with CPXV-like 2 but with low bootstrap support (< 70%) (Jeske et al., 2019), although AKPV was not included in their phylogenetic analysis compared to our study that included AKPV and more OPXV strains. When AKPV was excluded from the construction of our phylogenetic trees, the ECTV-Abatino-like/ECTV/OPXV Abatino clade clustered with CPXV\_Ger1998/CPXV-like 2 in 75 OPXV whole- and core-genome phylogenetic trees but with low bootstrap support (Supplementary Figures 14-17). In contrast, the bootstrap value in the node that clustered these clades increased from 46 to 82% in the phylogenetic tree based on 134 OPXV orthologous genes (Supplementary Figures 18, 19). We suspect that the genes or genomic regions that separated those clades have homologs in AKPV-for instance, homologs

of *NoH2-166*, *NoH2-167*, *NoH2-174*, and *NoH2-210* genes, which were most similar to the AKPV genes, were not included in the construction of the phylogenetic tree based on 134 OPXV orthologous genes.

In fact, CPXV-No-H2 has a mosaic genome with genes most similar to the OPXV genes from the Old World, including ECTV and VACV, and the North America, AKPV. Previously, we have shown that the *atip* gene from CPXV-No-H2 displayed the highest similarity to the corresponding ECTV gene, and the insertion of the ECTV *atip* gene may be a result of the recombination between CPXV and ECTV or an ECTVlike virus (Okeke et al., 2012). Our present study suggested similar findings and indicated that CPXV-No-H2 has also undergone recombination events between AKPV and VACV. A recombination between OPXVs has been reported by others (Gubser et al., 2004; Coulson and Upton, 2011; Qin et al., 2011, 2015; Okeke et al., 2012; Smithson et al., 2014, 2017a; Franke et al., 2017; Gao et al., 2018; Gigante et al., 2019).

CPXV-No-H2 displays recombination events with OPXVs that were isolated from different places and species. CPXV-No-H2 is a strain from Northern Norway (Okeke et al., 2012). Its closest relatives CPXV\_GerMygEK938\_17 and CPXV\_Ger2010\_MKY were isolated in Germany, but they were isolated from different species: bank vole and cotton-top tamarin, respectively (Kalthoff et al., 2014; Jeske et al., 2019). It was suggested that the infection of cotton-top tamarin was mediated by bank vole infected with CPXV (Jeske et al., 2019; Weber et al., 2020). In contrast, AKPV was isolated from a human patient in North America (Alaska, the United States). The patient's infection source is unknown, but it is presumable that she was infected by a small mammal (Springer et al., 2017; Gigante et al., 2019). VACV and ECTV have been reported around the world (Dumbell and Richardson, 1993; Miranda et al., 2017; Mavian et al., 2021). ECTV infects laboratory mice worldwide (Trentin and Briody, 1953; Mavian et al., 2021; Wang et al., 2021). The first discovered ECTV strain, ECTV\_Hampstead, was isolated in the United Kingdom and was the progenitor of the European outbreaks. Only one ECTV strain (ECTV\_MouKre) was isolated from a wild mouse in Germany (Mavian et al., 2021). The worldwide presence of ECTV in animals suggests their presence also in Norwegian fauna and hence the possibility to recombine with CPXV.

Among the nine potential recombination events in the CPXV-No-H2 genome, two potential recombination events with the parental AKPV (putative recombination events 3 and 5) overlap with two potential recombination events with the parental ECTV (putative recombination events 6 and 7). Interestingly, in the same position of these recombinant regions, AKPV has undergone a potential recombination with ECTV, and it was suggested that ECTV contains an AKPV-like sequence (Gigante et al., 2019).

These recombinant regions (putative recombination events 5 and 8) contain the *atip* gene, which is one of the three genes (*atip*, *p4c*, and *A27L*) required for the formation of the V<sup>+</sup> ATI phenotype (Patel and Pickup, 1987; McKelvey et al., 2002; Howard et al., 2010). CPXV-No-H2 contains an intact ECTV-like *atip*, *p4c*, and *A27L* genes. Those latter genes

were most similar to CPXV\_GerMygEK938\_17 genes. CPXV-No-H2 produces mainly virions encrusted on the surface of ATI (V<sup>+/</sup>) similar to ECTV\_Hampstead, which produces both V<sup>+</sup> and V<sup>+/</sup> ATI phenotype (Ichihashi and Matsumoto, 1966; Okeke et al., 2012; Mavian et al., 2021). ECTV\_Hampstead encodes a full-length p4c protein compared to other ECTV isolates with V<sup>-</sup> ATI phenotype. Besides this, it contains the *atip* and *A27L* genes (Mavian et al., 2021). AKPV and CPXV\_Ger2010\_MKY also comprise these three genes and produce the V<sup>+</sup> ATI phenotype (Franke et al., 2017; Springer et al., 2017; Gigante et al., 2019). There is no report of the production of ATI bodies in CPXV\_GerMygEK938\_17; however, its *atip*, *p4c*, and *A27L* genes are most similar to those of CPXV\_Ger2010\_MKY.

The potential recombination event between the parental AKPV and CPXV (putative recombinant event 6) located close to the terminal region contains part of the NoH2-210 gene that shared similarity with AKPV-203 and the Murmansk gene. AKPV-203 is one of the three AKPV genes that may be introduced from/to Murmansk poxvirus by recombination (Gigante et al., 2019). Murmansk is a non-OPXV that belongs to the genus Centapoxvirus that was isolated in Murmansk, Russia (Smithson et al., 2017a). In three of the six recombination events with the parental AKPV (putative recombination events 1, 4, and 6), it seems that CPXV-No-H2 contains AKPV-like sequences rather than AKPV containing CPXV-No-H2-like sequences because the phylogenetic trees showed that CPXV-No-H2 is not part of the ECTV-Abatino-like clade and was placed next to AKPV (Supplementary Figures 5, 8, 10). In contrast, the overlapping recombinant regions seem to be CPXV-No-H2like sequences that were introduced to AKPV based on the phylogenetic tree and the sequence similarity (Supplementary Figures 7, 9, 11, 12).

Reconstructing the evolutionary history of CPXV-No-H2 is difficult since it displays several potential recombination events with different OPXVs, especially when it is suspected that recombination events occurred between these OPXVs (such as AKPV and ECTV) (Gigante et al., 2019). Additionally, these OPXVs were isolated from different continents (Springer et al., 2017; Mavian et al., 2021). One plausible hypothesis about the mosaic genome of CPXV-No-H2 is that the CPXV\_GerMygEK938\_17-like virus was probably circulating in a population of rodents in Europe, and it underwent recombination with the AKPV-like virus. The resultant virus, CPXV-No-H2-like virus, could have suffered genomic changes and adapted to mice, which could be the possible ancestor of ECTV. The origin of ECTV from the CPXV-like ancestor was previously proposed (Jeske et al., 2019) since ECTV has a shorter genome (ranging from 204 to 208 kbp) and reduced number of genes compared to CPXV that has the largest genome among OPXVs, about 220 kbp (Chen et al., 2003; Hendrickson et al., 2010; Carroll et al., 2011; Dabrowski et al., 2013; Mavian et al., 2014, 2021). Our results suggest that CPXV-No-H2 could be derived from a CPXV\_GerMygEK938\_17-like virus because (1) CPXV\_GerMygEK938\_17 shares the highest similarity with CPXV-No-H2, (2) it did not show any significant recombination event (Kalthoff et al., 2014; Jeske et al., 2019), (3) none of the

seven recombination regions in CPXV-No-H2 was highly similar to either CPXV\_GerMygEK938\_17 or CPXV\_Ger2010\_MKY, (4) there is high similarity between their *p4c* and *A27L* genes, (5) its place of isolation was also in Europe, and (6) we speculated that it has  $V^+$  ATI phenotype similar to CPXV\_Ger2010\_MKY due to the similarity between their *atip*, *p4c*, and *A27L* genes.

The recombination may have occurred between CPXV\_GerMygEK938\_17-like virus and AKPV-like virus rather than ECTV-like virus because, aside from two recombination events with the parental AKPV that overlapped a recombination event with the parental ECTV, there are other four recombinant events with the parental AKPV which cannot be viewed as a simple coincidence. In addition, the two suspected recombination regions in the ECTV genome (Gigante et al., 2019) were more similar to CPXV-No-H2 than AKPV (data not shown). Furthermore, hypothetically, CPXV\_GerMygEK938\_17 may produce V<sup>+</sup> ATI similar to AKPV, while CPXV-No-H2 and ECTV\_Hampstead produce both V<sup>+</sup> and V<sup>+/</sup> ATI phenotypes (Ichihashi and Matsumoto, 1966; Okeke et al., 2012; Mavian et al., 2021). It seems that the putative progeny virus, CPXV-No-H2-like virus, may have reduced its ability to embed virions into ATI bodies. This was also observed in the derivates of ECTV\_Hampstead that produces the V<sup>-</sup> ATI phenotype (Mavian et al., 2021). We speculated that the recombination between CPXV\_GerMygEK938\_17-like virus and AKPV-like virus could take place in a rodent in Europe because AKPV contains genes from a Russian poxvirus, Murmansk, which was isolated from a root vole (Smithson et al., 2017a; Gigante et al., 2019), and CPXV\_GerMygEK938\_17 was isolated from bank vole in Europe (Jeske et al., 2019). Furthermore, CPXV-No-H2 was isolated in Europe, likewise with CPXV\_Ger2010\_MKY and ECTV\_Hampstead (the source of the European outbreaks) (Hansen et al., 2009; Okeke et al., 2012; Kalthoff et al., 2014; Mavian et al., 2021).

However, it is pertinent to note that recombination detection programs predict hypothetical recombination events across genomes, and the outputs are sensitive to input parameter settings, particularly the sliding window size. To increase the likelihood of putative recombination events being real, we recommend the following: (i) use of these programs at default settings, (ii) identification of the exact recombination event by at least two different programs and algorithms, (iii) discountenance of recombination events without very high statistical support, (iv) confirmation of recombination breakpoints by manual inspection of similarity plots, and (v) incongruence of phylogenetic trees.

Another explanation for the presence of the OPXV-like genomic regions in CPXV-No-H2 could be symplesiomorphy because most genomic regions were similar to more than one taxon—for instance, the two CPXV-No-H2 genomic regions that were similar to ECTV and AKPV may be inherited from a common ancestral virus, likewise with the AKPV-like genomic region that contains part of the *NoH2-210* similar to AKPV and Murmansk. However, symplesiomorphy does not explain the presence of the AKPV-like genomic region of 2,150 bp in CPXV-No-H2, which did not share high similarity with

other taxa. The only plausible explanation is that CPXV-No-H2 may have obtained this sequence from an AKPV-like virus by recombination.

Overall, the genetic analysis of the atypical CPXV-No-H2 suggested that it contains sequences similar to other OPXVs, and one of the plausible explanations for their presence was recombination events with other OPXVs. In addition, CPXV-No-H2 is part of a new CPXV clade that was more phylogenetically related to ECTV and OPXV Abatino than other CPXV strains. Our findings provide some insight into the evolutionary history of CPXV and strongly support the genetic heterogeneity of the species CPXV. The discovery of new CPXV isolates and their phylogenetic relationship with OPXVs as well their genomic characterization will contribute to the further elucidation of the complex evolutionary history of CPXV.

#### DATA AVAILABILITY STATEMENT

The original contributions presented in the study are publicly available. This data can be found here: https://www.ncbi.nlm.nih. gov/genbank/, OM460002.

#### **AUTHOR CONTRIBUTIONS**

DD-C conducted the experiments, analyzed the data, and wrote the manuscript. MO and UM conceptualized the study,

#### REFERENCES

- Abrahão, J. S., Campos, R. K., De Souza Trindade, G., Da Fonseca, F. G., Ferreira, P. C. P., and Kroon, E. G. (2015). Outbreak of Severe Zoonotic Vaccinia Virus Infection, Southeastern Brazil. *Emerg. Infect. Dis.* 21:695. doi: 10.3201/EID2104. 140351
- Alakunle, E., Moens, U., Nchinda, G., and Okeke, M. I. (2020). Monkeypox Virus in Nigeria: infection Biology, Epidemiology, and Evolution. *Viruses* 12:1211157. doi: 10.3390/V12111257
- Andrews, S. (2010). A Quality Control tool for High Throughput Sequence Data. Available online at: https://www.bioinformatics.babraham.ac.uk/projects/ fastqc/ (accessed October 16, 2020).
- Bankevich, A., Nurk, S., Antipov, D., Gurevich, A. A., Dvorkin, M., Kulikov, A. S., et al. (2012). SPAdes: a New Genome Assembly Algorithm and Its Applications to Single-Cell Sequencing. J. Comput. Biol. 19:477. doi: 10.1089/CMB.2012.0021
- Bolger, A. M., Lohse, M., and Usadel, B. (2014). Trimmomatic: a flexible trimmer for Illumina sequence data. *Bioinformatics* 30, 2114–2020. doi: 10. 1093/BIOINFORMATICS/BTU170
- Boni, M. F., Posada, D., and Feldman, M. W. (2007). An Exact Nonparametric Method for Inferring Mosaic Structure in Sequence Triplets. *Genetics* 176, 1035–1047. doi: 10.1534/GENETICS.106.068874
- Camacho, C., Coulouris, G., Avagyan, V., Ma, N., Papadopoulos, J., Bealer, K., et al. (2009). BLAST+: architecture and applications. *BMC Bioinform*. 10:421. doi: 10.1186/1471-2105-10-421
- Cardeti, G., Gruber, C. E. M., Eleni, C., Carletti, F., Castilletti, C., Manna, G., et al. (2017). Fatal Outbreak in Tonkean Macaques Caused by Possibly Novel Orthopoxvirus, Italy, January 2015 - Volume 23, Number 12—December 2017 -Emerging Infectious Diseases journal - CDC. *Emerg. Infect. Dis.* 23, 1941–1949. doi: 10.3201/EID2312.162098
- Carroll, D. S., Emerson, G. L., Li, Y., Sammons, S., Olson, V., Frace, M., et al. (2011). Chasing Jenner's vaccine: Revisiting Cowpox

supervised the design and execution of the project, and wrote the manuscript. AB and AN contributed to data interpretation and revision of the manuscript for improved intellectual content. All authors contributed to the article and approved the submitted version.

#### FUNDING

This study was supported by the University of Tromsø, the Arctic University of Norway (project A212100108) and the National Graduate School in Infection Biology and Antimicrobials (grant no. 249062). Article processing charge was paid UiT - The Arctic University of Norway.

#### ACKNOWLEDGMENTS

We thank Jessin Janice and Juan Daniel Montenegro Cabrera for their assistance during the bioinformatics analysis.

#### SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fmicb. 2022.868887/full#supplementary-material

virus classification. *PLoS One* 6, 4–9. doi: 10.1371/journal.pone.002 3086

- Chantrey, J., Meyer, H., Baxby, D., Begon, M., Bown, K. J., Hazel, S. M., et al. (1999). Cowpox: reservoir hosts and geographic range. *Epidemiol. Infect.* 122:455. doi: 10.1017/S0950268899002423
- Chen, N., Danila, M. I., Feng, Z., Buller, R. M. L., Wang, C., Han, X., et al. (2003). The genomic sequence of ectromelia virus, the causative agent of mousepox. *Virology* 317, 165–186. doi: 10.1016/S0042-6822(03)00520-8
- Coulson, D., and Upton, C. (2011). Characterization of indels in poxvirus genomes. Virus Genes 42, 171–177. doi: 10.1007/S11262-010-0560-X/ FIGURES/4
- Dabrowski, P. W., Radoniæ, A., Kurth, A., and Nitsche, A. (2013). Genome-wide comparison of cowpox viruses reveals a new clade related to variola virus. *PLoS One* 8, 1–9. doi: 10.1371/journal.pone.0079953
- Damaso, C. R. A., Reis, S. A., Jesus, D. M., Lima, P. S. F., and Moussatché, N. (2007). A PCR-based assay for detection of emerging vaccinia-like viruses isolated in Brazil. *Diagn. Microbiol. Infect. Dis.* 57, 39–46. doi: 10.1016/J. DIAGMICROBIO.2006.07.012
- Darriba, D., Posada, D., Kozlov, A. M., Stamatakis, A., Morel, B., and Flouri, T. (2020). ModelTest-NG: A New and Scalable Tool for the Selection of DNA and Protein Evolutionary Models. *Mol. Biol. Evol.* 37:294. doi: 10.1093/MOLBEV/ MSZ189
- Diaz, J. H. (2021). The Disease Ecology, Epidemiology, Clinical Manifestations, Management, Prevention, and Control of Increasing Human Infections with Animal Orthopoxviruses. *Wilderness Environ. Med.* 32, 528–536. doi: 10.1016/ J.WEM.2021.08.003
- Dumbell, K., and Richardson, M. (1993). Virological investigations of specimens from buffaloes affected by buffalopox in Maharashtra State, India between 1985 and 1987. Arch. Virol. 128, 257–267. doi: 10.1007/BF01309438
- Durski, K. N., McCollum, A. M., Nakazawa, Y., Petersen, B. W., Reynolds, M. G., Briand, S., et al. (2018). Emergence of Monkeypox — West and Central

Africa, 1970–2017. Morb. Mortal. Wkly. Rep. 67:310. doi: 10.15585/MMWR. MM6710A5

- Ehlers, A., Osborne, J., Slack, S., Roper, R. L., and Upton, C. (2002). Poxvirus Orthologous Clusters (POCs). *Bioinformatics* 18, 1544–1545. doi: 10.1093/ BIOINFORMATICS/18.11.1544
- Emms, D. M., and Kelly, S. (2015). OrthoFinder: solving fundamental biases in whole genome comparisons dramatically improves orthogroup inference accuracy. *Genome Biol.* 16:2. doi: 10.1186/S13059-015-0721-2
- Erez, N., Achdout, H., Milrot, E., Schwartz, Y., Wiener-Well, Y., Paran, N., et al. (2019). Diagnosis of Imported Monkeypox, Israel, 2018. *Emerg. Infect. Dis.* 25:980. doi: 10.3201/EID2505.190076
- Ferrier, A., Frenois-Veyrat, G., Schvoerer, E., Henard, S., Jarjaval, F., Drouet, I., et al. (2021). Fatal cowpox virus infection in human fetus, france, 2017. *Emerg. Infect. Dis.* 27, 2570–2577. doi: 10.3201/eid2710.204818
- Franke, A., Pfaff, F., Jenckel, M., Hoffmann, B., Höper, D., Antwerpen, M., et al. (2017). Classification of cowpox viruses into several distinct clades and identification of a novel lineage. *Viruses* 9, 1–14. doi: 10.3390/v9060142
- Gao, J., Gigante, C., Khmaladze, E., Liu, P., Tang, S., Wilkins, K., et al. (2018). Genome sequences of Akhmeta virus, an early divergent old world orthopoxvirus. *Viruses* 10:50252. doi: 10.3390/v10050252
- Gibbs, M. J., Armstrong, J. S., and Gibbs, A. J. (2000). Sister-Scanning: a Monte Carlo procedure for assessing signals in recombinant sequences. *Bioinformatics* 16, 573–582. doi: 10.1093/BIOINFORMATICS/16.7.573
- Gigante, C. M., Gao, J., Tang, S., McCollum, A. M., Wilkins, K., Reynolds, M. G., et al. (2019). Genome of Alaskapox Virus, a Novel Orthopoxvirus Isolated from Alaska. *Viruses* 11:1080708. doi: 10.3390/V11080708
- Girling, S. J., Pizzi, R., Cox, A., and Beard, P. M. (2011). Fatal cowpox virus infection in two squirrel monkeys (Saimiri sciureus). *Vet. Rec.* 169, 156–156. doi: 10.1136/VR.D4005
- Gubser, C., Hué, S., Kellam, P., and Smith, G. L. (2004). Poxvirus genomes: A phylogenetic analysis. J. Gen. Virol. 85, 105–117. doi: 10.1099/VIR.0.19565-0/ CITE/REFWORKS
- Hansen, H., Okeke, M. I., Nilssen, O., and Traavik, T. (2009). Comparison and phylogenetic analysis of cowpox viruses isolated from cats and humans in Fennoscandia. Arch. Virol. 154, 1293–1302. doi: 10.1007/S00705-009-0442-5/ FIGURES/3
- Hendrickson, R. C., Wang, C., Hatcher, E. L., and Lefkowitz, E. J. (2010). Orthopoxvirus Genome Evolution: the Role of Gene Loss. *Viruses* 2, 1933–1967. doi: 10.3390/V2091933
- Howard, A. R., Weisberg, A. S., and Moss, B. (2010). Congregation of Orthopoxvirus Virions in Cytoplasmic A-Type Inclusions Is Mediated by Interactions of a Bridging Protein (A26p) with a Matrix Protein (ATIp) and a Virion Membrane-Associated Protein (A27p). J. Virol. 84:7592. doi: 10.1128/ JVI.00704-10
- Ichihashi, Y., and Matsumoto, S. (1966). Studies on the nature of marchal bodies (A-type inclusion) during ectromelia virus infection. *Virology* 29, 264–275. doi: 10.1016/0042-6822(66)90033-X
- Jacobs, B. L., Langland, J. O., Kibler, K. V., Denzler, K. L., White, S. D., Holechek, S. A., et al. (2009). Vaccinia virus vaccines: past, present and future. *Antiviral Res.* 84, 1–13. doi: 10.1016/J.ANTIVIRAL.2009.06.006
- Jeske, K., Weber, S., Pfaff, F., Imholt, C., Jacob, J., Beer, M., et al. (2019). Molecular Detection and Characterization of the First Cowpox Virus Isolate Derived from a Bank Vole. *Viruses* 11:1111075. doi: 10.3390/V11111075
- Kalthan, E., Tenguere, J., Ndjapou, S. G., Koyazengbe, T. A., Mbomba, J., Marada, R. M., et al. (2018). Investigation of an outbreak of monkeypox in an area occupied by armed groups, Central African Republic. *Méd. Mal. Infect.* 48, 263–268. doi: 10.1016/J.MEDMAL.2018.02.010
- Kalthoff, D., Bock, W. I., Hühn, F., Beer, M., and Hoffmann, B. (2014). Fatal cowpox virus infection in cotton-top tamarins (Saguinus oedipus) in Germany. *Vector-Borne Zoonotic Dis.* 14, 303–305. doi: 10.1089/VBZ.2013. 1442
- Katoh, K., and Standley, D. M. (2013). MAFFT Multiple Sequence Alignment Software Version 7: improvements in Performance and Usability. *Mol. Biol. Evol.* 30, 772–780. doi: 10.1093/MOLBEV/MST010
- Kinnunen, P. M., Henttonen, H., Hoffmann, B., Kallio, E. R., Korthase, C., Laakkonen, J., et al. (2011). Orthopox Virus Infections in Eurasian Wild Rodents. *Vector Borne Zoonotic Dis.* 11, 1133–1140. doi: 10.1089/VBZ.2010. 0170

- Laakkonen, J., Kallio-Kokko, H., Öktem, M. A., Blasdell, K., Plyusnina, A., Niemimaa, J., et al. (2006). Serological Survey for Viral Pathogens in Turkish Rodents. J. Wildl. Dis. 42, 672–676. doi: 10.7589/0090-3558-42. 3.672
- Li, H., and Durbin, R. (2009). Fast and accurate short read alignment with Burrows-Wheeler transform. *Bioinformatics* 25, 1754–1760. doi: 10.1093/ BIOINFORMATICS/BTP324
- Lim, T. H., Lee, H. J., Lee, D. H., Lee, Y. N., Park, J. K., Youn, H. N., et al. (2011). An emerging recombinant cluster of nephropathogenic strains of avian infectious bronchitis virus in Korea. *Infect. Genet. Evol.* 11, 678–685. doi: 10. 1016/J.MEEGID.2011.01.007
- Lole, K. S., Bollinger, R. C., Paranjape, R. S., Gadkari, D., Kulkarni, S. S., Novak, N. G., et al. (1999). Full-Length Human Immunodeficiency Virus Type 1 Genomes from Subtype C-Infected Seroconverters in India, with Evidence of Intersubtype Recombination. J. Virol. 73:160. doi: 10.1128/jvi.73.1.152-160. 1999
- MacLachlan, N. J., and Dubovi, E. J. (eds) (2017). "Poxviridae," in Fenner's Veterinary Virology, (Boston: Academic Press), 157–174. doi: 10.1016/B978-0-12-800946-8.00007-6
- Martin, D. P., Murrell, B., Golden, M., Khoosal, A., and Muhire, B. (2015). RDP4: Detection and analysis of recombination patterns in virus genomes. *Virus Evol.* 1:3. doi: 10.1093/VE/VEV003
- Martin, D. P., Posada, D., Crandall, K. A., and Williamson, C. (2005). A Modified Bootscan Algorithm for Automated Identification of Recombinant Sequences and Recombination Breakpoints. *AIDS Res. Hum. Retrovir.* 21, 98–102. doi: 10.1089/AID.2005.21.98
- Martin, D., and Rybicki, E. (2000). RDP: detection of recombination amongst aligned sequences. *Bioinformatics* 16, 562–563. doi: 10.1093/ BIOINFORMATICS/16.6.562
- Mauldin, M. R., Antwerpen, M., Emerson, G. L., Li, Y., Zoeller, G., Carroll, D. S., et al. (2017). Cowpox virus: What's in a Name? *Viruses* 2017:101. doi: 10.3390/ V9050101
- Mavian, C., López-Bueno, A., Bryant, N. A., Seeger, K., Quail, M. A., Harris, D., et al. (2014). The genome sequence of ectromelia virus Naval and Cornell isolates from outbreaks in North America. *Virology* 462–463, 218–226. doi: 10.1016/j.virol.2014.06.010
- Mavian, C., López-Bueno, A., Martín, R., Nitsche, A., and Alcamí, A. (2021). Comparative pathogenesis, genomics and phylogeography of mousepox. *Viruses* 13:13061146. doi: 10.3390/v13061146
- McKelvey, T. A., Andrews, S. C., Miller, S. E., Ray, C. A., and Pickup, D. J. (2002). Identification of the Orthopoxvirus p4c Gene, Which Encodes a Structural Protein That Directs Intracellular Mature Virus Particles into A-Type Inclusions. J. Virol. 76:11216. doi: 10.1128/JVI.76.22.11216-11225. 2002
- Megid, J., Borges, I. A., Abrahão, J. S., Trindade, G. S., Appolinário, C. M., Ribeiro, M. G., et al. (2012). Vaccinia Virus Zoonotic Infection, São Paulo State, Brazil. *Emerg. Infect. Dis.* 18:189. doi: 10.3201/EID1801.110692
- Miranda, J. B., Borges, I. A., Campos, S. P. S., Vieira, F. N., De Ázara, T. M. F., Marques, F. A., et al. (2017). Serologic and Molecular Evidence of Vaccinia Virus Circulation among Small Mammals from Different Biomes, Brazil. *Emerg. Infect. Dis.* 23:931. doi: 10.3201/EID2306.161643
- Nakoune, E., Lampaert, E., Ndjapou, S. G., Janssens, C., Zuniga, I., Van Herp, M., et al. (2017). A Nosocomial Outbreak of Human Monkeypox in the Central African Republic. *Open Forum Infect. Dis.* 4:168. doi: 10.1093/OFID/OFX168
- Ng, O. T., Lee, V., Marimuthu, K., Vasoo, S., Chan, G., Lin, R. T. P., et al. (2019). A case of imported Monkeypox in Singapore. *Lancet. Infect. Dis.* 19:1166. doi: 10.1016/S1473-3099(19)30537-7
- Okeke, M. I., Hansen, H., and Traavik, T. (2012). A naturally occurring cowpox virus with an ectromelia virus A-type inclusion protein gene displays atypical A-type inclusions. *Infect. Genet. Evol.* 12, 160–168. doi: 10.1016/J.MEEGID. 2011.09.017
- Okeke, M. I, Okoli, A. S., Nilssen, O., Moens, U., Tryland, M., Bøhn, T., et al. (2014). Molecular characterization and phylogenetics of Fennoscandian cowpox virus isolates based on the p4c and atip genes. *Virol. J.* 11, 1–16. doi: 10.1186/1743-422X-11-119/TABLES/5
- Padidam, M., Sawyer, S., and Fauquet, C. M. (1999). Possible Emergence of New Geminiviruses by Frequent Recombination. *Virology* 265, 218–225. doi: 10. 1006/VIRO.1999.0056

- Patel, D. D., and Pickup, D. J. (1987). Messenger RNAs of a strongly-expressed late gene of cowpox virus contain 5'-terminal poly(A) sequences. *EMBO J.* 6:3787. doi: 10.1002/J.1460-2075.1987.TB02714.X
- Popova, A. Y., Maksyutov, R. A., Taranov, O. S., Tregubchak, T. V., Zaikovskaya, A. V., Sergeev, A. A., et al. (2017). Cowpox in a human, Russia, 2015. *Epidemiol. Infect.* 145, 755–759. doi: 10.1017/S0950268816002922
- Posada, D., and Crandall, K. A. (2001). Evaluation of methods for detecting recombination from DNA sequences: Computer simulations. *Proc. Natl. Acad. Sci.* 98, 13757–13762. doi: 10.1073/PNAS.241370698
- Prkno, A., Hoffmann, D., Goerigk, D., Kaiser, M., van Maanen, A. C. F., Jeske, K., et al. (2017). Epidemiological investigations of four cowpox virus outbreaks in alpaca herds, Germany. *Viruses* 9, 1–15. doi: 10.3390/v9110344
- Qin, L., Favis, N., Famulski, J., and Evans, D. H. (2015). Evolution of and Evolutionary Relationships between Extant Vaccinia Virus Strains. J. Virol. 89:1809. doi: 10.1128/JVI.02797-14
- Qin, L., Upton, C., Hazes, B., and Evans, D. H. (2011). Genomic Analysis of the Vaccinia Virus Strain Variants Found in Dryvax Vaccine. J. Virol. 85:13049. doi: 10.1128/JVI.05779-11
- Rambaut, A. (2018). *FigTree*. Available online at: http://tree.bio.ed.ac.uk/software/ figtree/ [accessed February 19, 2021]
- Reynolds, M. G., Guagliardo, S. A. J., Nakazawa, Y. J., Doty, J. B., and Mauldin, M. R. (2018). Understanding orthopoxvirus host range and evolution: from the enigmatic to the usual suspects. *Curr. Opin. Virol.* 28, 108–115. doi: 10.1016/J. COVIRO.2017.11.012
- Ronquist, F., Teslenko, M., Van Der Mark, P., Ayres, D. L., Darling, A., Höhna, S., et al. (2012). MrBayes 3.2: Efficient Bayesian Phylogenetic Inference and Model Choice Across a Large Model Space. Syst. Biol. 61, 539–542. doi: 10.1093/ SYSBIO/SYS029
- Silva, N. I. O., de Oliveira, J. S., Kroon, E. G., Trindade, G., de, S., and Drumond, B. P. (2021). Here, There, and Everywhere: The Wide Host Range and Geographic Distribution of Zoonotic Orthopoxviruses. *Viruses* 2021:13. doi: 10.3390/V13010043
- Smith, J. M. (1992). Analyzing the mosaic structure of genes. J. Mol. Evol. 342, 126–129. doi: 10.1007/BF00182389
- Smith, K. C., Bennett, M., and Garrett, D. C. (1999). Skin lesions caused by orthopoxvirus infection in a dog. J. Small Anim. Pract. 40, 495–497. doi: 10. 1111/J.1748-5827.1999.TB03003.X
- Smithson, C., Tang, N., Sammons, S., Frace, M., Batra, D., Li, Y., et al. (2017b). The genomes of three North American orthopoxviruses. *Virus Genes* 53, 21–34. doi: 10.1007/S11262-016-1388-9/TABLES/2
- Smithson, C., Meyer, H., Gigante, C. M., Gao, J., Zhao, H., Batra, D., et al. (2017a). Two novel poxviruses with unusual genome rearrangements: NY\_014 and Murmansk. *Virus Genes* 53, 883–897. doi: 10.1007/S11262-017-1501-8/ FIGURES/5
- Smithson, C., Purdy, A., Verster, A. J., and Upton, C. (2014). Prediction of Steps in the Evolution of Variola Virus Host Range. *PLoS One* 9:e91520. doi: 10.1371/ JOURNAL.PONE.0091520
- Springer, Y. P., Hsu, C. H., Werle, Z. R., Olson, L. E., Cooper, M. P., Castrodale, L. J., et al. (2017). Novel Orthopoxvirus Infection in an Alaska Resident. *Clin. Infect. Dis. An Off. Publ. Infect. Dis. Soc. Am.* 64:1737. doi: 10.1093/CID/CIX219
- Stamatakis, A. (2014). RAXML version 8: a tool for phylogenetic analysis and post-analysis of large phylogenies. *Bioinformatics* 30:1313. doi: 10.1093/ BIOINFORMATICS/BTU033
- Strassburg, M. A. (1982). The global eradication of smallpox. Am. J. Infect. Control 10, 53–59. doi: 10.1016/0196-6553(82)90003-7
- Talavera, G., and Castresana, J. (2007). Improvement of Phylogenies after Removing Divergent and Ambiguously Aligned Blocks from Protein

Sequence Alignments. Syst. Biol. 56, 564–577. doi: 10.1080/106351507014 72164

- Tcherepanov, V., Ehlers, A., and Upton, C. (2006). Genome Annotation Transfer Utility (GATU): rapid annotation of viral genomes using a closely related reference genome. *BMC Gen.* 7:150. doi: 10.1186/1471-2164-7-150
- Trentin, J. J., and Briody, B. A. (1953). An outbreak of mouse-pox (infectious ectromelia) in the United States: II. *Definit. Diag.* 1953, 227. doi: 10.1126/ science.117.3035.227
- Tryland, M., Myrmel, H., Holtet, L., Haukenes, G., and Traavik, T. (1998). Clinical cowpox cases in Norway. Scand. J. Infect. Dis. 30, 301–303. doi: 10.1080/ 00365549850160972
- Vaughan, A., Aarons, E., Astbury, J., Balasegaram, S., Beadsworth, M., Beck, C. R., et al. (2018). Two cases of monkeypox imported to the United Kingdom, September 2018. *Eurosurveillance* 23:1800509. doi: 10.2807/1560-7917.ES.2018. 23.38.1800509
- Vora, N. M., Li, Y., Geleishvili, M., Emerson, G. L., Khmaladze, E., Maghlakelidze, G., et al. (2015). Human Infection with a Zoonotic Orthopoxvirus in the Country of Georgia. N. Engl. J. Med. 372:1223. doi: 10.1056/NEJMOA1407647
- Vorou, R. M., Papavassiliou, V. G., and Pierroutsakos, I. N. (2008). Cowpox virus infection: An emerging health threat. *Curr. Opin. Infect. Dis.* 21, 153–156. doi: 10.1097/QCO.0B013E3282F44C74
- Wang, J., Liu, X., Zhu, Q., Wu, Q., Tang, S., Zhang, L., et al. (2021). Identification, Isolation, and Characterization of an Ectromelia Virus New Strain from an Experimental Mouse. *Virol. Sin.* 36, 155–158. doi: 10.1007/s12250-020-00 263-w
- Weber, S., Jeske, K., Ulrich, R. G., Imholt, C., Jacob, J., Beer, M., et al. (2020). In vivo characterization of a bank vole-derived cowpox virus isolate in natural hosts and the rat model. *Viruses* 12:12020237. doi: 10.3390/v1202 0237
- Wingett, S. W., and Andrews, S. (2018). FastQ Screen: a tool for multigenome mapping and quality control. *F1000Research* 7:1338. doi: 10.12688/ F1000RESEARCH.15931.2
- Wolfs, T. F. W., Wagenaar, J. A., Niesters, H. G. M., and Osterhaus, A. D. M. E. (2002). Rat-to-Human Transmission of Cowpox Infection. *Emerg. Infect. Dis.* 8:1495. doi: 10.3201/EID0812.020089
- Yinka-Ogunleye, A., Aruna, O., Dalhat, M., Ogoina, D., McCollum, A., Disu, Y., et al. (2019). Outbreak of human monkeypox in Nigeria in 2017–18: a clinical and epidemiological report. *Lancet Infect. Dis.* 19, 872–879. doi: 10.1016/S1473-3099(19)30294-4

**Conflict of Interest:** The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

**Publisher's Note:** All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

Copyright © 2022 Diaz-Cánova, Moens, Brinkmann, Nitsche and Okeke. This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY). The use, distribution or reproduction in other forums is permitted, provided the original author(s) and the copyright owner(s) are credited and that the original publication in this journal is cited, in accordance with accepted academic practice. No use, distribution or reproduction is permitted which does not comply with these terms.



## Supplementary Material

#### **1** Supplementary Figures

**Supplementary Figure S1.** Schematic diagram of alignment of CPXV-No-H2, CPXV\_GerMygEK938\_17, CPXV\_Ger2010\_MKY and ECTV\_Mos showing the *NoH2-163* gene and their homologs, using Geneious software 2021.2.2. Grey regions indicate conserved bases while colors (red, blue, yellow, green) indicate differences (A, C, G, T, respectively) from CPXV-No-H2.

**Supplementary Figure S2.** Maximum-Likelihood phylogenetic tree based on 76 orthopoxvirus whole genomes. Bootstrap values were determined from 1000 replica sampling. *Cowpox virus* (CPXV) strains were grouped into different clades: CPXV-like 1, CPXV-like 2, and VARV-like (Franke et al., 2017). The scale bar represents expected substitutions per site.

**Supplementary Figure S3.** Maximum-Likelihood phylogenetic tree on 76 orthopoxvirus core genomes. Bootstrap values were determined from 1000 replica sampling. *Cowpox virus* (CPXV) strains were grouped into different clades: CPXV-like 1, CPXV-like 2, and VARV-like (Franke et al., 2017). The scale bar represents expected substitutions per site.

**Supplementary Figure S4.** Maximum-Likelihood phylogenetic tree of 134 orthopoxvirus orthologous genes. Bootstrap values were determined from 1000 replica sampling. *Cowpox virus* (CPXV) strains were grouped into different clades: CPXV-like 1, CPXV-like 2, and VARV-like (Franke et al., 2017). The scale bar represents expected substitutions per site.

**Supplementary Figure S5.** Maximum-Likelihood phylogenetic tree based on the putative recombinant region 1 between the parental AKPV and CPXV (potential recombinant event 1). Bootstrap values were determined from 1000 replica sampling. Clades are identified with colors.

**Supplementary Figure S6.** Maximum-Likelihood phylogenetic tree based on the putative recombinant region 2 between the parental AKPV and CPXV (potential recombinant event 2). Bootstrap values were determined from 1000 replica sampling. Clades are identified with colors.

**Supplementary Figure S7.** Maximum-Likelihood phylogenetic tree based on the putative recombinant region 3 between the parental AKPV and CPXV (potential recombinant event 3). Bootstrap values were determined from 1000 replica sampling. Clades are identified with colors.

**Supplementary Figure S8.** Maximum-Likelihood phylogenetic tree based on the putative recombinant region 4 between the parental AKPV and CPXV (potential recombinant event 4). Bootstrap values were determined from 1000 replica sampling. Clades are identified with colors.

**Supplementary Figure S9.** Maximum-Likelihood phylogenetic tree based on the putative recombinant region 5 between the parental AKPV and CPXV (potential recombinant event 5). Bootstrap values were determined from 1000 replica sampling. Clades are identified with colors.

**Supplementary Figure S10.** Maximum-Likelihood phylogenetic tree based on the putative recombinant region 6 between the parental AKPV and CPXV (potential recombinant event 6). Bootstrap values were determined from 1000 replica sampling. Clades are identified with colors.

**Supplementary Figure S11.** Maximum-Likelihood phylogenetic tree based on the putative recombinant region 1 between the parental ECTV and CPXV (potential recombinant event 7). Bootstrap values were determined from 1000 replica sampling. Clades are identified with colors.

**Supplementary Figure S12.** Maximum-Likelihood phylogenetic tree based on the putative recombinant region 2 between the parental ECTV and CPXV (potential recombinant event 8). Bootstrap values were determined from 1000 replica sampling. Clades are identified with colors.

**Supplementary Figure S13.** Maximum-Likelihood phylogenetic tree based on the putative recombinant region between the parental VACV and CPXV (potential recombinant event 9). Bootstrap values were determined from 1000 replica sampling. Clades are identified with colors.

**Supplementary Figure S14.** Maximum-Likelihood phylogenetic tree based on 75 OPXV whole genomes. Bootstrap values were determined from 1000 replica sampling. Clades are identified with colors.

**Supplementary Figure S15.** Bayesian Inference phylogenetic tree based on 75 OPXV whole genomes. Clades are identified with colors.

**Supplementary Figure S16.** Maximum-Likelihood phylogenetic tree based on 75 OPXV core genomes. Bootstrap values were determined from 1000 replica sampling. Clades are identified with colors.

**Supplementary Figure S17.** Bayesian Inference phylogenetic tree based on 75 OPXV core genomes. Clades are identified with colors.

**Supplementary Figure S18.** Maximum-Likelihood phylogenetic tree based on 134 orthologous genes from 75 OPXV genomes. Bootstrap values were determined from 1000 replica sampling. Clades are identified with colors.

**Supplementary Figure S19.** Bayesian Inference phylogenetic tree based on 134 orthologous genes from 75 OPXV genomes. Clades are identified with colors.



	159 645	159 695	159 745	159 795	159 845	159.895	159 945	159 995	160.045	160.095	160 145
	19910-19	1001000	100/140	100/100	1001010	100/000	1001010	100/000	10010-10	1001035	1001115
	NoH2-163 CDS										
CPXV-No-H2											
	CPXV-Ger_2010_MKY-211										
	_	CPXV169									
FIID CPXV_Ger2010_MKY											
											CPXV170 CDS
	_					CPXV169					
FIID CPXV_GerMygEk938_17											
END FOTV Man						EVH156	•				
FWD ECTV_INIOS					•		-				

**Supplementary Figure S1.** Schematic diagram of alignment of CPXV-No-H2, CPXV\_GerMygEK938\_17, CPXV\_Ger2010\_MKY and ECTV\_Mos showing the *NoH2-163* gene and their homologs, using Geneious software 2021.2.2. Grey regions indicate conserved bases while colors (red, blue, yellow, green) indicate differences (A, C, G, T, respectively) from CPXV-No-H2.





**Supplementary Figure S2.** Maximum-Likelihood phylogenetic tree based on 76 orthopoxvirus whole genomes. Bootstrap values were determined from 1000 replica sampling. *Cowpox virus* (CPXV) strains were grouped into different clades: CPXV-like 1, CPXV-like 2, and VARV-like (Franke et al., 2017). The scale bar represents expected substitutions per site.



**Supplementary Figure S3.** Maximum-Likelihood phylogenetic tree on 76 orthopoxvirus core genomes. Bootstrap values were determined from 1000 replica sampling. *Cowpox virus* (CPXV) strains were grouped into different clades: CPXV-like 1, CPXV-like 2, and VARV-like (Franke et al., 2017). The scale bar represents expected substitutions per site.



**Supplementary Figure S4.** Maximum-Likelihood phylogenetic tree of 134 orthopoxvirus orthologous genes. Bootstrap values were determined from 1000 replica sampling. *Cowpox virus* (CPXV) strains were grouped into different clades: CPXV-like 1, CPXV-like 2, and VARV-like (Franke et al., 2017). The scale bar represents expected substitutions per site.



**Supplementary Figure S5.** Maximum-Likelihood phylogenetic tree based on the putative recombinant region 1 between the parental AKPV and CPXV (potential recombinant event 1). Bootstrap values were determined from 1000 replica sampling. Clades are identified with colors.

#### Supplementary Material



**Supplementary Figure S6.** Maximum-Likelihood phylogenetic tree based on the putative recombinant region 2 between the parental AKPV and CPXV (potential recombinant event 2). Bootstrap values were determined from 1000 replica sampling. Clades are identified with colors.



**Supplementary Figure S7.** Maximum-Likelihood phylogenetic tree based on the putative recombinant region 3 between the parental AKPV and CPXV (potential recombinant event 3). Bootstrap values were determined from 1000 replica sampling. Clades are identified with colors.

#### Supplementary Material



**Supplementary Figure S8.** Maximum-Likelihood phylogenetic tree based on the putative recombinant region 4 between the parental AKPV and CPXV (potential recombinant event 4). Bootstrap values were determined from 1000 replica sampling. Clades are identified with colors.



**Supplementary Figure S9.** Maximum-Likelihood phylogenetic tree based on the putative recombinant region 5 between the parental AKPV and CPXV (potential recombinant event 5). Bootstrap values were determined from 1000 replica sampling. Clades are identified with colors.

#### Supplementary Material



**Supplementary Figure S10.** Maximum-Likelihood phylogenetic tree based on the putative recombinant region 6 between the parental AKPV and CPXV (potential recombinant event 6). Bootstrap values were determined from 1000 replica sampling. Clades are identified with colors.



**Supplementary Figure S11.** Maximum-Likelihood phylogenetic tree based on the putative recombinant region 1 between the parental ECTV and CPXV (potential recombinant event 7). Bootstrap values were determined from 1000 replica sampling. Clades are identified with colors.

#### Supplementary Material



**Supplementary Figure S12.** Maximum-Likelihood phylogenetic tree based on the putative recombinant region 2 between the parental ECTV and CPXV (potential recombinant event 8). Bootstrap values were determined from 1000 replica sampling. Clades are identified with colors.


**Supplementary Figure S13.** Maximum-Likelihood phylogenetic tree based on the putative recombinant region between the parental VACV and CPXV (potential recombinant event 9). Bootstrap values were determined from 1000 replica sampling. Clades are identified with colors.

## Supplementary Material



**Supplementary Figure S14.** Maximum-Likelihood phylogenetic tree based on 75 OPXV whole genomes. Bootstrap values were determined from 1000 replica sampling. Clades are identified with colors.



0.04

Supplementary Figure S15. Bayesian Inference phylogenetic tree based on 75 OPXV whole genomes. Clades are identified with colors.

## Supplementary Material



**Supplementary Figure S16.** Maximum-Likelihood phylogenetic tree based on 75 OPXV core genomes. Bootstrap values were determined from 1000 replica sampling. Clades are identified with colors.



0.04

Supplementary Figure S17. Bayesian Inference phylogenetic tree based on 75 OPXV core genomes. Clades are identified with colors.

## Supplementary Material



**Supplementary Figure S18.** Maximum-Likelihood phylogenetic tree based on 134 orthologous genes from 75 OPXV genomes. Bootstrap values were determined from 1000 replica sampling. Clades are identified with colors.



Supplementary Figure S19. Bayesian Inference phylogenetic tree based on 134 orthologous genes from 75 OPXV genomes. Clades are identified with colors.

## Supplementary Table S1. List of strains used in this study.

Virus species	Strain	GenBank number accession	Abbreviation
Akhmeta virus	2013-85	MH607142	AKMV 2013 85
	2013-88	MH607141	AKMV 2013 88
	Vani 2010	MH607143	AKMV Vani 2010
Alaskapox virus	2015	MN240300	AKPV 2015
Camelnox virus	CMS	AY009089	CMLV CMS
Cumeipox virus	M96	NC 003391	CMLV_CMS
Cowpor virus	Amadeus 2015	L N879483	CPXV AMA 2015
Cowpox virus	Austria 1000	HQ407377	CPXV AUS 1999
	PagPar04/1	KC912401.1	CRVV_AUS_1999
	DeaDei04/1	NC 002662	CPAV_BeaBel04_1
	Griprion Red	NC_005005	CPAV_BK
		KC813506.1	CPXV_CatPot0//1
	EleGri0//1	KC813507	CPXV_EleGRi0//I
	Finland 2000 MAN	HQ420893	CPXV_FIN_2000_MAN
	FM2292	LN864566	CPXV_FM2292
	France 2001 Nancy	HQ420894	CPXV_FRA_2001_Nancy
	Germany 91-3	DQ437593	CPXV_Ger91
	Germany 1980 EP4	HQ420895	CPXV_Ger1980_EP4
	Germany 1990 2	HQ420896	CPXV_Ger1990_2
	Germany 1998 2	HQ420897	CPXV_Ger1998_2
	Germany 2002 MKY	HQ420898	CPXV_Ger2002_MKY
	Ger/2007/Vole	LT896722	CPXV_Ger2007_Vole
	Ger/2010/Alpaca	LT896718	CPXV_Ger2010_Alpaca
	Ger/2010/MKY	LT896721	CPXV_Ger2010_MKY
	Ger/2010/Raccoon	LT896730	CPXV_Ger2010_Racoon
	Ger/2010/Rat	LT896728	CPXV Ger2010 Rat
	Ger/2012/Alpaca	LT896726	CPXV Ger2012 Alpaca
	Ger/2013/Alpaca	LT896719	CPXV Ger2013 Alpaca
	Ger/2014/Cat1	LT896723	CPXV Ger2014 Cat1
	Ger/2014/Cat2	L T896725	CPXV Ger2014 Cat2
	Ger/2014/Human	L T993226	CPXV Ger2014 Human
	Ger/2015/Cat1	L1775220	CPXV Ger2015 Cat1
	Ger/2015/Cat1	L1890724	CDXV_Ger2015_Cat1
	Cor/2015/Cat2	L1890/2/	CPXV_Oer2015_Lhrman2
	Cer/2017/Abase2	L1993232	CPXV_Ger2013_Hullan2
	Ger/2017/Alpaca2	L1890/32	CPXV_Ger2017_Alpaca2
	Ger/2017/CommonvoleFMEimka	L1993228	CPXV_Ger2017_Vole
	GerMygEK 938/17	LR812035	CPXV_GerMygEk93_17
	GRI-90	X94355	CPXV_GRI
	HumAac09/1	KC813508.1	CPXV_HumAac09_1
	HumBer07/1	KC813509.1	CPXV_HumBer07_1
	HumGra07/1	KC813510.1	CPXV_HumGra07_1
	HumKre08/1	KC813512.1	CPXV_HumKre08_1
	HumLan08/1	KC813492.1	CPXV_HumLan08_1
	HumLit08/1	KC813493.1	CPXV_HumLit08_1
	HumMag07/1	KC813495.1	CPXV_HumMag07_1
	JagKre08/1	KC813497.1	CPXV_JagKre08_1
	JagKre08/2	KC813498.1	CPXV_JagKre08_2
	MonKre08/4	KC813500.1	CPXV_MonKre08_4
	Norway1994MAN	HQ420899	CPXV_NOR_1994_MAN
	RatAac09/1	KC813501.1	CPXV_RatAac09_1
	RatGer09/1	KC813503.1	CPXV_RatGer09_1
	Ratpox09	LN864565	CPXV_RatPox09
Ectromelia virus	ERPV culture-collection ATCC:VR-1431	JQ410350	ECTV_ERPV
	Hampstead	KY554976	ECTV Hampstead
	Moscow	NC 004105	ECTV Mos
	Naval	KJ563295	ECTV Nav
Horsepox virus	MNR-76	D0792504	HSPV MNR76
Monkeypox virus	Congo 2003 358	D0011154	MPXV COG 2003 358
	Liberia 1970 184	D0011156	MPXV I BR 1970 184
	Nigeria_SE_1971	K 1642617	MPXV NERia SE 1971
	Zaire	NC 003310	MPXV 74R
Abatino macacanox virus	Zanc	MH816996	OPXV Abatino
Raccoonnor virus	Hermon	KP1/3769	PCNV Herman
Raccoonpox virus	Litracht	AV484660	DDVV Utr
Showber an official	WA	NC 021028 1	CKDV WA
Skunkpox virus	WA Data was 1069	NC_000201	SKPV_WA
Taterapox virus	Danomey 1968	NC_008291	TATV_DAH68
Vaccinia virus	Copenhagen	M35027	VACV_Cop
	Chorioallantois Ankara (CVA)	AM501482	VACV_CVA
	DUKE	DQ439815	VACV_DUKE
	Lister	AY678276	VACV_Lister
Variola virus	Bangladesh 1975 v75-550 Banu	DQ437581	VARV_BGD75_Banu
	Garcia 1966	Y16780	VARV_GARV_1966
	Japan 1946 (Yamada MS-2(A) Tokyo)	DQ441429	VARV_JPN46_yam
	Sierra Leone 1969 (V68-258)	DQ441437	VARV_SLE68
	VD21	KY358055	VARV_VD21
Volepox virus	CA	NC_031033.1	VPXV_CAL

**Supplementary Table S2.** Predicted genes in CPXV-No-H2 compared to reference genomes CPXV-Brighton (CPXV\_BR), ECTV-Moscow (ECTV\_Mos) and VACV-Copenhagen (VACV\_Cop).

CDS	Start	Stop	Length (bp)	Direction	Function	CPXV_BR	Similarity (%)	ECTV_Mos	Similarity (%)	VACV_Cop	Similarity (%)
NoH2-001	897	1637	741	reverse	Chemokine binding protein (Cop-C23L)	vCCI/CPXV003	91.94	EVM001	83.00	B29R/C23L	79.01
NoH2-002 NoH2 002	1/46	2795	1050	reverse	INF receptor (CrmB) (Cop-C22L)	CRVV005	92.96	- EVM002	- 94.22	B28R/C22L B25B/C10L	75.00
NoH2-003	4744	4833	90	reverse	Ankyrin (cop-c1)2) Ankyrin like repeat containing protein	CPXV000	100.00	1.111002	04.55	B25RCT7L	19.12
NoH2-005	4871	6892	2022	reverse	Ankyrin (Cop-C17L)	CPXV008	95.38	-	-	B23R/C17L	87.57
NoH2-006	7064	7525	462	reverse	Hypothetical protein (Cop-C16L)	PXV009/CPXV22	55.56	-	-	B22R/C16L	55.92
NoH2-007	7643	8311	669	reverse	Alpha amanatin target protein (Cop-N2L)	CPXV010	89.59	-	-	-	-
NoH2-008	8529	9101	573	reverse	Hypothetical protein (Cop-C14L) PTP Kalah domain aantaining protain CPL complex (Cop. A55P)	-	-	- EVM004		-	-
NoH2-010	11192	12205	1014	reverse	Ankvrin (Cop-B20R)	CPXV011	92.88	EVM004 EVM005	88.72	-	-
NoH2-011	12481	12681	201	reverse	C-type lectin domain containing protein	CPXV012	100.00	EVM007	67.44	-	-
NoH2-012	12765	14300	1536	reverse	BTB Kelch-domain containing protein; CRL comple x (Cop-A55R)	CPXV013	91.85	-	-	-	-
NoH2-013	14370	14966	597	reverse	TNF receptor (CrmB) (Cop-C22L)	CPXV014	83.85	EVM008	79.69	-	-
NoH2-014 NoH2-015	14963	15289	327	reverse	TNF-alpha receptor like protein	vCD30/CPXV015	97.22	EVM009	90.83	-	-
NoH2-015	17946	19250	1305	reverse	Ankyrin (CPXV-017)	CPXV010 CPXV017	92.87	-	-	-	-
NoH2-017	19346	19867	522	reverse	MPV-Z-N3R	CPXV018	86.71	-	-	-	-
NoH2-018	19927	22242	2316	reverse	Ankyrin (Cop-B18R)	CPXV019	86.43	-	-	-	-
NoH2-019	22358	22876	519	reverse	Host range protein	CPXV020	91.28	-	-	-	-
NoH2-020 NoH2-021	23038	23364	327	Torward	Secreted EGF-like protein (Cop-C11R)	CPXV022	82.57	- EVM011	96.39	CIDE	79.82 01.80
NoH2-022	25143	25871	729	forward	Zinc finger-like protein	CPXV023	94.22	EVM012	92.15	-	-
NoH2-023	26001	26381	381	reverse	Soluble IL-18 binding protein (Bsh-D7L)	CPXV024	92.06	EVM013	90.08	-	-
NoH2-024	26439	28445	2007	reverse	Ankyrin Host Range (Bang-D8L)	VHR1/CPXV025	94.01	-	-	-	-
NoH2-025	28582	28770	189	reverse	ANK-containing protein	CPXV026	90.00	EVM014	75.47	-	-
NoH2-020	28947	31455	558	reverse	Unknown (Con-CSL)	CPXV027 CPXV028	89.21	-	-	C9L C8L	82.91
NoH2-028	31525	31977	453	reverse	Type 1 IFN inhibitor (Cop-C7L)	CPXV029	96.67	EVM015	93.33	C7L	96.67
NoH2-029	32209	32679	471	reverse	Bcl-2-like protein, IFN-beta inhibitor (Cop-C6L)	CPXV030	92.11	EVM016	92.76	C6L	92.67
NoH2-030	32834	32956	123	reverse	Kelch-like protein (Cop-C5L)	CPXV031	66.67	-	-		-
NoH2-031	33111	33431	321	reverse	Ketch-like protein (Cop-C5L)	CPXV032 CPXV032	92.45	-	-	CSL C4L	91.35
NoH2-032	34519	35304	786	reverse	Complement binding (secreted) (Cop-C3L)	CPXV033	89.35	EVM017	91.57	C4L C3L	89.35
NoH2-034	35361	36899	1539	reverse	POZ BTB Kekh domain protein (Cop-C2L)	CPXV035	97.07	EVM018	95.90	C2L	98.05
NoH2-035	36966	37655	690	reverse	Putative TLR signalling inhibitor (Cop-C1L)	CPXV036	92.21	-	-	CIL	91.93
NoH2-036	37642	37998	357	reverse	Anti-apoptotic Bcl-2-like protein (Cop-N1L)	CPXV037	91.53	EVM019	93.22	NIL	90.68
NoH2-03/	38714	38672 40120	337 1416	reverse	ANK-containing protein: apoptosis inihibitor (C on-M11)	CPAV038 CPXV039	87.08 95.35	EVM020 EVM021	04.50 96.82	M11	83.62 96.82
NoH2-039	40107	40769	663	reverse	NFkB inhibitor (Cop-M2L)	CPXV040	92.27	-	-	M2L	92.27
NoH2-040	40903	41760	858	reverse	Ankyrin NFkB inhibitor (Cop-K1L)	CPXV041	96.47	EVM022	95.44	KIL	95.05
NoH2-041	41992	43119	1128	reverse	Serpin 1,2,3 (Cop-K2L)	SPI3/CPXV042	95.73	H14-B/EVM023	93.60	K2L	92.27
NoH2-042	43169	43435	267	reverse	IFIN resistance, PKR/eIF-alpha inhibitor (Cop-K3 L)	CPXV043	92.05	-	-	K3L VAT	87.50
NoH2-045	43485	44759	834	reverse	Monoglyceride linase (Cop-K5L)	CPXV044 CPXV045	98.11	- H14-F/EVM024	96.73	K5L	96.93
NoH2-045	45752	46201	450	forward	Host immune response repressor (Cop-K7R)	CPXV046	97.32	-	-	K7R	95.97
					Caspase-9 (apoptosis) inhibitor (mitochondrial- associated) (Cop-						
NoH2-046	46275	46997	723	reverse	FIL) during (Con F2L)	CPXV048 CPXV040	83.20	EVM025	86.98	FIL	88.56
NoH2-047	40997	48906	1443	reverse	Kekh-like protein (Cop-F3L)	CPXV049 CPXV050	94.38	EVM020	94.57	F3L	93.33
NoH2-049	48917	49876	960	reverse	Ribonucleotide reductase small subunit (Cop-F4L)	CPXV051	97.49	EVM028	98.12	F4L	97.49
NoH2-050	49912	50898	987	reverse	36kDa major membrane protein (Cop-F5L)	CPXV052	86.28	-	-	F5L	82.32
NoH2-051 NoH2-052	51166	51152	225	reverse	Hypothetical protein (Cop-F6L) Hypothetical protein (Cop-F7L)	CPXV053 CPXV054	85.14	EVM029 EVM030	90.54	F6L F7L	91.89
NoH2-053	51574	51777	204	reverse	Cytoplasmic protein (Cop-F8L)	CPXV055	96.88	EVM031	95.31	F8L	98.44
NoH2-054	51837	52475	639	reverse	S-S bond formation pathway protein substrate (Cop-F9L)	CPXV056	98.59	EVM032	97.17	F9L	98.11
NoH2-055	52462	53781	1320	reverse	Essential Ser[Thr kinase morph (Cop-F10L)	CPXV057 CPXV050	99.32	EVM033	99.09	F10L	99.54
NoH2-056 NoH2-057	54926	56830	1065	reverse	EEV maturation protein (Cop-F11L)	CPXV059 CPXV060	98.31	EVM034 EVM035	97.63	F11L F12L	99.15
NoH2-058	56876	57994	1119	reverse	Palmitylated EEV membrane glycoprotein (Cop-F13 L)	CPXV061	99.19	EVM036	100.00	F13L	99.46
NoH2-059	58012	58263	252	reverse	Unknown (Cop-F14L)	CPXV062	77.11	EVM037	71.08	F14L	75.90
NoH2-060 NoH2-061	58308	58466	159	forward	CPV-B-063 Unknown conserved protein (Cop. E151.)	CPXV063 CPXV064	90.39	- EVM038	- 08.73	- F15I	
NoH2-062	59030	59713	684	reverse	Non-functional Serine Recombinase (Cop-F16L)	CPXV065	94.71	EVM039	95.60	F16L	96.92
					DNA-binding phosphoprotein (VP11); mTOR antagon ist (Cop-						
NoH2-063	59776	60081	306	forward	F17R) Poly (A) polymorphic automatic automatic (VIP55) (C on E11.)	CPXV066 CPXV067	98.02	EVM040	97.03	F17R	99.01
NoH2-065	61514	63727	2214	reverse	IEV morphogenesis (Cop-E2L)	CPXV067 CPXV068	99.05	EVM041 EVM042	97.97	E1L E2L	98.24
					dsRNA-binding protein, IFN resistance PKR inhib itor (Z-DNA						
NoH2-066	63851	64423	573	reverse	binding) (Cop-E3L)	CPXV069	92.11	EVM043	90.00	E3L	90.53
NoH2-067	64479	65258	780	reverse	RNA polymerase subunit (RPO30) (Cop-E4L)	CPXV070	98.08	EVM044	99.61	E4L	99.61
NoH2-068	66498	68201	960	forward	Virion protein (Cop-E5R)	CPXV071 CPXV072	95.95	EVM045 EVM046	98.41	E5R E6R	90.91
NoH2-070	68282	68767	486	forward	Myristylated protein (Cop-E7R)	CPXV073	93.17	EVM047	90.68	E7R	93.17
NoH2-071	68907	69728	822	forward	ER-localized membrane protein, virion core prot ein (Cop-E8R)	CPXV074	98.17	EVM048	97.80	E8R	99.27
NoH2-072	69735	72755	3021	reverse	DNA polymerase (Cop-E9L)	CPXV075	99.40	EVM049	97.82	E9L	98.51
NoH2-073 NoH2-074	73060	73458	288	torward reverse	Sumnyuryi oxidase (FAD-linked) (Cop-E10R) Virion core protein (Cop-E11L)	CPXV076 CPXV077	98.95	EVM050 EVM051	97.90	E10R F111	100.00
NoH2-075	73445	75445	2001	reverse	Membrane protein (Cop-D1L)	CPXV077 CPXV078	97.90	EVM051 EVM052	96.40	OIL	97.45
NoH2-076	75493	75819	327	reverse	Glutaredoxin 1 (Cop-O2L)	CPXV079	98.15	EVM053	99.07	O2L	100.00
NoH2-077	75843	75950	108	reverse	Virus entry/fusion complex component (Cop-O3L)	-	-	-	-	O3L	100.00
NoH2-078	75965	76903	939	reverse	DNA-binding core protein (Cop-11L)	CPXV080 CPXV081	99.68 84 Q2	EVM054 EVM055	98.72	11L 121	99.68 86.30
NoH2-079	77129	77938	810	reverse	ssDNA-binding phosphoprotein (Cop-I3L)	CPXV082	99.63	EVM055	98.51	I3L	98.14
NoH2-081	78021	80336	2316	reverse	Ribonucleotide reductase large subunit (Cop-I4L )	CPXV083	98.83	EVM057	96.50	I4L	98.70
NoH2-082	80363	80602	240	reverse	IMV protein VP13 (Cop-I5L)	CPXV084	98.73	EVM058	97.47	I5L	100.00
NoH2-083 NoH2-084	80621	81769	1149	reverse	reiomere-omding protein (Cop-16L) Virion core cysteine protease (Cop-17L)	CPXV085 CPXV086	99.22	EVM059 EVM060	99.22	16L 171	99.74 98.11
NoH2-085	83039	85069	2031	forward	RNA helicase, DExH-NPH-II domain (Cop-I8R)	CPXV080 CPXV087	96.01	EVM061	96.60	I8R	95.56
NoH2-086	85073	86848	1776	reverse	Metalloprotease (Cop-G1L)	CPXV088	98.48	EVM062	98.48	GIL	98.65
NoH2-087	86845	87180	336	reverse	Entry/fusion complex component (Cop-G3L)	CPXV089	98.20	EVM063	96.40	G3L	97.30
NoH2-088	87174	87836	663	forward	VLTF (late transcription elongation factor) (Co p-G2R) Chutaradoxin like protein (Con G4L)	CPXV090	98.64	EVM064	98.18	G2R C41	100.00
NoH2-089 NoH2-090	88183	89487	3/5	forward	FEN1-like nuclease (Cop-G5R)	CPXV091 CPXV092	99.19 98.16	EVM065 EVM066	97.93	G5R	99.19 98.62
NoH2-091	89495	89686	192	forward	RNA polymerase subunit (RPO7) (Cop-G5.5R)	CPXV093	100.00	EVM067	100.00	G5.5R	100.00
NoH2-092	89688	90185	498	forward	NLPc P60 superfamily protein (Cop-G6R)	CPXV094	96.36	EVM068	97.58	G6R	96.36
NoH2-093	90150	91265	1116	reverse	Virion phosphoprotein, early morphogenesis (Cop -G7L)	CPXV095	99.73	EVM069	99.19	G7L	99.19
NoH2-094 NoH2-095	91296	92078	/83	forward	VL1F-1 (ate transcription factor 1) (Cop-G8R) Entryffision complex component, muristylprotein (Cop_G9P)	CPXV09/ CPXV098	99.62 97.94	EVM070 EVM071	100.00	G8R G9R	98.53
NoH2-095	93121	93873	753	forward	IMV membrane protein (Cop-LIR)	CPXV099	98.40	EVM072	98.40	LIR	98.80
NoH2-097	93905	94171	267	forward	Viral membrane assembly proteins (VMAP) (Cop-L2 R)	CPXV100	98.86	EVM073	90.91	L2R	92.05
NoH2-098	94161	95213	1053	reverse	Internal virion protein (Cop-L3L)	CPXV101	98.00	EVM074	92.66	L3L	97.43
NoH2-099 NoH2-100	95238	96389	/56 387	forward	Entry and Fusion IMV protein (Cop-L4R)	CPXV102 CPXV103	98.81 99.22	EVM075 EVM076	98.81	L4K L5R	98.41 100.00
NoH2-101	96346	96807	462	forward	Virion morph (Cop-J1R)	CPXV104	100.00	EVM077	100.00	JIR	98.69
NoH2-102	96823	97356	534	forward	Thymidine kinase (Cop-J2R)	CPXV105	97.18	EVM078	96.61	J2R	99.44
NoH2-103	97422	98423	1002	forward	Poly (A) polymerase small subunit (VP39) (Cop-J 3R) PNA polymerase subunit (PPO22) (Cop-J4P)	CPXV106	99.40	EVM079	99.40	J3R 14D	98.50
NoH2-104	98956	99357	402	reverse	IMV membrane protein (Cop-J5L)	CPXV10/ CPXV108	99.25	EVM081	99.25	J4K J5L	98.50
NoH2-106	99464	103324	3861	forward	RNA polymerase subunit (RPO147) (Cop-J6R)	CPXV109	99.15	EVM082	99.07	J6R	99.22
NoH2-107	103321	103836	516	reverse	Tyr/Ser phosphatase, IFN-gamma inhibitor (Cop-H 1L)	CPXV110	99.42	EVM083	99.42	HIL	99.42
NoH2-108	103850	104419	570	torward	IMV membrane protein (Cop-H2R)	CPXVIII	99.47	EVM084	98.94	H2R	98.41
NoH2-110	105400	107787	2388	reverse	PAP04 (PNA pol assoc protein) (Con-H4L)	CPXV112	99.37	EVM086	98.62	HAL	90.72

NoH2-111	107973	108602	630	forward	VLTF-4 (late transcription factor 4) (Cop-H5R)	CPXV114	95.22	EVM087	88.38	H5R	88.24
NoH2-112	108603	109547	945	forward	DNA topoisomerase type I (Cop-H6R)	CPXV115	99.05	EVM088	99.05	H6R	99.68
NoH2-113 NoH2-114	109585	112600	2532	forward	mRNA capping enzyme large subunit (Cop-D1R)	CPXVI17 CPXVI18	95.89	EVM089 EVM090	95.21	DIR	98.70
NoH2-115	112559	112999	441	reverse	Virion core (Cop-D2L)	CPXV119	99.32	EVM091	97.95	D2L	98.63
NoH2-116	112992	113705	714	forward	Virion core (Cop-D3R)	CPXV120	98.73	EVM092	98.73	D3R	97.47
NoH2-117	113705	114361	657	forward	D4R)	CPXV121	97.25	EVM093	97.71	D4R	98.62
NoH2-118	114393	116750	2358	forward	NTPase, DNA primase (Cop-D5R)	CPXV122	97.83	EVM094	97.83	D5R	98.47
NoH2 110	116701	119704	1014	formend	Morphogenesis, VETF-s (early transcription fact or small) (Cop-	CRYV122	00.52	EV/M005	09.74	DEP	00.06
NoH2-119 NoH2-120	118731	118704	486	forward	RNA polymerase subunit (RPO18) (Cop-D7R)	CPXV123 CPXV124	99.55	EVM095 EVM096	98.74	D6R D7R	99.06
					Carbonic anhydrase, GAG-binding IMV membrane pr otein (Cop-				,		
NoH2-121	119179	120096	918	reverse	D8L)	CPXV125	97.38	EVM097	95.41	D8L D0D	93.12
NoH2-122 NoH2-123	120138	120779	753	forward	mRNA decapping enzyme (Cop-D9R) mRNA decapping enzyme (Cop-D10R)	CPXV126 CPXV127	98.78	EVM098 EVM099	99.53 97.60	D9K D10R	99.53
NoH2-124	121525	123420	1896	reverse	ATPase, NPH1 (Cop-D11L)	CPXV128	99.68	EVM100	98.73	DIIL	99.53
NoH2-125	123455	124318	864	reverse	mRNA capping enzyme small subunit (Cop-D12L)	CPXV129	99.65	EVM101	99.30	D12L	99.65
NoH2-126 NoH2-127	124349	126004	453	reverse	Trimeric virion coat protein (ritampicin res) (Cop-D13L) VLTE-2 (late transcription factor 2) (Cop-A1L)	CPXVI31 CPXVI32	99.09	EVM102 EVM103	99.09 98.67	AII	99.09
NoH2-128	126501	127175	675	reverse	VLTF-3 (late transcription factor 3) (Cop-A2L)	CPXV132	99.11	EVM104	98.21	A2L	99.55
NoH2-129	127172	127402	231	reverse	S-S bond formation pathway protein (Cop-A2.5L)	CPXV134	96.05	EVM105	96.05	A2.5L	93.42
NoH2-130 NoH2-131	127417	129354	1938	reverse	P4b precursor (Cop-A3L) 30k Da virion core protein (Con-A4L)	CPXV135 CPXV136	97.67	EVM106 EVM107	97.36	A3L	97.52
NoH2-132	130296	130790	495	forward	RNA polymerase subunit (RPO19) (Cop-A5R)	CPXV137	98.17	EVM108	96.95	A5R	98.17
					Viral membrane assembly proteins (VMAP), core p rotein (Cop-						
NoH2-133 NoH2-134	130787	131905	2133	reverse	A6L) VETE-I (early transcription factor large) (Con- A7I.)	CPXV138 CPXV139	98.12	EVM109 EVM110	98.12	A6L 47I	99.19
NoH2-135	134115	134981	867	forward	VITF-3 34kda subunit (Cop-A8R)	CPXV140	98.96	EVMIII	98.26	A8R	98.61
NoH2-136	134974	135336	363	reverse	Viral membrane associated, early morphogenesis protein (Cop-A9L)	CPXV141 CPXV142	96.00	EVM112	79.49	A9L	84.04
NoH2-137	133337	138983	957	forward	Viral membrane assembly proteins (VMAP) (Cop-A1 1R)	CPXV142 CPXV143	100.00	EVM113 EVM114	99.37	AllR	99.69
NoH2-139	138980	139558	579	reverse	Virion core and cleavage processing protein (Co p-A12L)	CPXV144	92.19	EVM115	95.31	A12L	98.44
NoH2-140	139582	139788	207	reverse	IMV membrane protein, virion maturation (Cop-A1 3L)	CPXV145	87.14	EVM116	86.77	A13L	87.14
NoH2-141	140185	140346	162	reverse	Non-essential IMV membrane protein (Cop-A14.5L)	CPXV140 CPXV147	100.00	EVM117.5	100.00	A14L A14.5L	100.00
NoH2-143	140336	140620	285	reverse	Core protein (Cop-A15L)	CPXV148	100.00	EVM118	97.87	A15L	100.00
NoH2-144	140604	141737	1134	reverse	Myristylated protein, essential for entrylfusio n (Cop-A16L)	CPXV149	97.88	EVM119	96.82	A16L	98.68
NoH2-145	141/40	143847	1482	forward	DNA helicase, transcript release factor (Cop-A1 8R)	CPAV150 CPXV151	96.76	EVM120 EVM121	90.06 97.77	A1/L A18R	98.38
NoH2-147	143828	144061	234	reverse	Zinc finger-like protein (Cop-A19L)	CPXV152	100.00	EVM122	97.40	A19L	100.00
No.113 149	144062	144415	254	-	IMV membrane protein, entry/fusion complex component (Cop-	CDV3/152	08.20	EVANIOS	07.44	4.217	100.00
NoH2-148 NoH2-149	144062	144415	354	forward	A21L) DNA polymerase processivity factor (Con-A20R)	CPXV153 CPXV154	98.29	EVM123 EVM124	97.46	A21L A20R	97.89
NoH2-150	145624	146187	564	forward	Holliday junction resolvase (Cop-A22R)	CPXV155	99.47	EVM125	98.40	A22R	98.86
NoH2-151	146206	147354	1149	forward	VITF-3 45kda subunit (Cop-A23R)	CPXV156	99.22	EVM126	98.17	A23R	99.22
NoH2-152 NoH2-153	14/351	150845	3495	Iorward reverse	A-type inclusion protein (Cop-A25L)	CPXV158	51.73	EVM127 EVM128	99.83 94.82	A24K	- 99.14
NoH2-154	154153	155691	1539	reverse	P4c precursor (Cop-A26L)	CPXV161	87.06	-	-	A26L	92.39
NoH2-155	155743	156075	333	reverse	IMV surface protein, fusion protein (Cop-A27L)	CPXV162	98.18	EVM129	96.36	A27L	97.27
NoH2-156 NoH2-157	156076	156516	441	reverse	IMV MP Virus entry (Cop-A28L) PNA polymerase subunit (PPO35) (Cop. A29L)	CPXV163 CPXV164	97.95	EVM130 EVM131	97.26	A28L	97.26
NoH2-157	157397	157630	234	reverse	IMV protein (Cop-A30L)	CPXV165	96.10	EVM131 EVM132	97.40	A30L	98.70
NoH2-159	157663	157791	129	reverse	Viral membrane assembly proteins (VMAP) (Cop-A 30.5L)	165.5	95.24	-	-	A30.5L	100.00
NoH2-160 NoH2-161	157790	158170	381	forward	Hypothetical protein (Cop-A31R) ATPaseIDNA packaging protein (Cop. A32L)	CPXV166 CPXV167	89.29	EVM133 EVM134	93.65	A31R	96.03
	156174	150750		Teverse	EEV membrane phosphoglycoprotein, C-type lectin -like domain	CIAVI0/	70.44	LYMIDA	70.44	AJ2L	77.00
NoH2-162	159068	159631	564	forward	(Cop-A33R)	CPXV168	91.98	EVM135	88.24	A33R	88.24
NoH2-163 NoH2-164	159655	160161	507	forward	C-type lectin-like IEV/EEV glycoprotein (Cop-A34R)	CPXV169 CPXV171	94.05	EVM136 EVM137	97.62	A34R	92.86
NoH2-165	160801	161481	681	forward	IEV transmembrane phosphoprotein (Cop-A36R)	CPXV172	74.14	137.5f	67.88	A36R	74.56
NoH2-166	161546	162340	795	forward	Hypothetical protein (Cop-A37R)	CPXV173	84.03	-	-	A37R	84.73
NoH2-167	162451	162630	180	forward	Unknown (Gar-A43R)	CPXV174	70.18	-	-	-	-
NoH2-168 NoH2-169	162627	163460	216	forward	Semanhorin (Cop-A39R)	CPXV175 CPXV176	95.67	EVM138 EVM139	94.95	A39R	94.95 82.76
NoH2-170	164706	165185	480	forward	Lectin homolog (Cop-A40R)	CPXV177	91.25	-	-	A40R	97.08
NoH2-171	165294	165971	678	reverse	Chemokine binding protein (Cop-A41L) Deofin like protein ATI leastingd (Cop A42D)	CPXV178 CPXV170	90.05	EVM140	95.11	A41L	90.67
NoH2-172 NoH2-173	166577	167188	612	forward	Type I membrane glycoprotein (Cop-A43R)	CPXV1/9 CPXV180	65.03	EVM141 EVM142	99.51	A42R A43R	66.01
NoH2-174	167207	167431	225	forward	Hypothetical protein (Cop-A43.5R)	CPXV181	73.61	-	-	A43.5R	91.43
	100000	10000			3 beta-hydroxysteroid dehydrogenase delta 5->4 isomerase (Cop-	CREATING	02.44	F7 7 4 4 2	05.00		02.70
N0H2-175	10/586	108626	1041	reverse	P1++L)	CPAV182	92.44	EVM143	95.09	A44L	92.78
NoH2-176	168673	169050	378	forward	Inactive Cu-Zn superoxide dismutase-like virion protein (Cop-A45R)	CPXV183	95.20	EVM144	94.40	A45R	93.60
NoH2-177	169040	169762	723	forward	IL-1 TLR signaling inhibitor (Cop-A46R)	CPXV184	98.75	EVM145	97.50	A46R	97.30
NoH2-178 NoH2-179	109850	171300	684	forward	Thymidylate kinase (Cop-A48R)	CPXV185 CPXV186	98.77 99.12	EVM146 EVM147	95.90 98.68	A4/L A48R	95.90
NoH2-180	171350	171838	489	forward	Putative phosphotransferase anion transport pro tein (Cop-A49R)	CPXV187	95.06	-	-	A49R	97.53
NoH2-181	171870	173528	1659	forward	ATP-dependent DNA ligase (Cop-A50R)	CPXV188	96.39	EVM148	95.31	A50R	96.56
N0H2-182	1/5579	1/4583	1005	iorward	TollIL-1 receptor-like protein, IL-1, NFkB sig nalling inhibitor (Con-	CPXV189	94.51	EVM149	95.11	ASIK	94.91
NoH2-183	174656	175231	576	forward	A52R)	CPXV190	96.34	-	-	A52R	95.29
NoH2-184	175568	176125	558	forward	TNF receptor (CmC) (Cop-A53R)	CmC/CPXV191	85.56	-	-	A53R	78.18
NoH2-185	178143	178094	945	forward	Hemagglutinin (Cop-A56R)	CPAV193 CPXV194	95.57 84.18	EVM150 EVM151	95.04	A55K A56R	95.39 85.76
NoH2-187	179105	179698	594	forward	Guanylate kinase (Cop-A56.5R)	CPXV195	98.48	-	-	A57R	96.69
NoH2-188	179818	180717	900	forward	Ser[Thr Kinase (Cop-B1R)	CPXV196	97.99	EVM152	96.32	BIR	94.63
NoH2-189 NoH2-190	180/8/	184253	1518	forward	Ankyrin (Cop-B4R)	CPXV19/ CPXV198	94.65	EVM153 EVM154	90.68	B2K B4R	89.35 93.24
NoH2-191	184357	185313	957	forward	EEV type-1 membrane glycoprotein, protective an tigen (Cop-B5R)	CPXV199	89.62	C1R/EVM155	91.20	B5R	91.82
NoH2-192	185401	185946	546	forward	Ankyrin-like protein (Cop-B6R)	CPXV200	90.61	C2R/EVM156	89.50	B6R	88.40
NoH2-193 NoH2-194	185985	180539	555 801	forward	Soluble IFN-g receptor-like protein (Cop-B8R)	CPXV201 CPXV202	90.76	C3K/EVM157 C4R/EVM158	90.76	B/K B8R	90.22 88.21
NoH2-195	187506	188183	678	forward	ER-localized apoptosis regulator (Cop-B9R)	CPXV203	93.33	-	-	B9R	81.16
NoH2-196	188342	189850	1509	forward	Kelch-like protein (Cop-B10R)	CPXV204	92.03	- CSD #30 Proc	-	B10R	89.51
NoH2-197 NoH2-198	189924 190288	190220	297	forward	Ser/Thr Kinase (Cop-B12R)	CPXV205 CPXV206	97.02	C5K/EVM159 C6R/EVM160	93.94	B11R B12R	89.39
NoH2-199	191229	192260	1032	forward	Serpin 1,2,3 (Cop-K2L)	CrmA/CPXV207	95.03	C7R/EVM161	92.11	B14R	94.44
NoH2-200	192386	192835	450	forward	Hypothetical protein (Cop-C16L)	CPXV208	95.30	C8R/EVM162	93.29	B15R	93.29
NoH2-201 NoH2-202	192926 193951	193903	9/8	torward reverse	IL-1 beta receptor (Cop-B16R) IL-1 beta inhibitor (Cop-B17L)	CPXV209 CPXV210	95.09 96.77	C9K/EVM163 C10L/EVM164	81.10 92.04	B16K B17L	90.35
NoH2-203	195115	196881	1767	forward	Ankyrin (Cop-B18R)	CPXV211	95.24	C11R/EVM165	92.77	B18R	92.77
NoH2-204	196856	197953	1098	forward	IFN-alpha beta receptor glycoprotein (Cop-B19R)	CPXV212	92.08	C12R/EVM166	81.43	B19R	85.51
NoH2-205 NoH2-206	198015	202185	1629	forward	Ankyrm (Cop-B20R) kelch-like protein (EV-M-167)	CPXV213 CPXV215	95.60 96.59	- C13R/FVM167	- 78.04	B20R	82.26
NoH2-207	202304	202405	102	reverse	Hypothetical protein (Cop-C11.5R)	CPXV216	92.00	-	-	C11.5R	84.00
NoH2-208	202477	203556	1080	forward	Serpin 1,2,3 (Cop-K2L)	CPXV217	94.99	C14R/EVM168	94.43	C12L	92.48
NoH2-209 NoH2-210	203/46 204592	204333	588	forward	Surface glycoprotein	CPXV218 CPXV219	95.39 82.22	- C15R/EVM169	83.35	C14L B20.5R	89.86
NoH2-211	210688	211563	876	forward	Ankyrin (Cop-C19L)	CPXV220	86.01	-	-	-	-
NoH2-212	212705	213208	504	forward	TNF-alpha receptor (CPXV-GRI-K3R)	-	-	-	-	-	-
NoH2-213 NoH2-214	213385 215444	215406	2022	forward	Ankyrin (Cop-C1/L) Ankyrin-like repeat containing protein	CPXV223 CPXV224	95.38	-	-	в23R/C17L	87.57
NoH2-215	215521	217404	1884	forward	Ankyrin (Cop-C19L)	CPXV225	87.30	K1R/EVM171	84.33	B25R/C19L	79.12
NoH2-216	217482	218531	1050	forward	TNF receptor (CrmB) (Cop-C22L)	crmB/CPXV226	92.96	-	-	B28R/C22L	75.00
N-TTO OTT	210740	210200	7.4.2	for	Champlying hinding protoin (C C221)	UCCL/CDVCPC=	01.07	V OD TRO TRO	02.00	P20P/0227	70.01

CDS Start Stop CDVV Pr		Ston	ort Stop	CPXV Br	Identity (%)	BLASTp	-	BLASTn		
CDS	Start	Stop	CIAV_BI	Identity (76)	<b>OPXV</b> Genome with Highest Identity	Aminoacid identity (%)	<b>OPXV</b> Genome with Highest Identity	Nucleotide identity (%)		
NoH2-A	1636	1845	CPXV004	74.65	CPXV	76.1	CPXV GerMygEK938/17	98.1		
NoH2-B	38093	38188	-	-	CMLV 0408151v	83.3	CPXV GerMygEK938/17	99.0		
NoH2-C	45836	46030	-	-	CPXV GerMygEK938/17, CPXVGer2010MKY	100.0	CPXV GerMygEK938/17, CPXVGer2010MKY	100.0		
NoH2-D	46234	46413	CPXV047	83.05	CPXV Ger 2010 MKY	94.9	CPXV Ger 2010 MKY	98.3		
NoH2-E	49188	49424	CPXV051A	97.44	CPXV GerMygEK938/17, CPXVGer2010MKY	100.0	CPXV GerMygEK938/17, CPXVGer2010MKY	99.2		
NoH2-F	53895	54017	CPXV058	97.5	CPXV, VACV	97.5	ECTV	100.0		
NoH2-G	54768	54890	-	-	VACV CEyV1	87.5	CPXV	99.2		
NoH2-H	58313	58462	-	-	OPXV Abatino	98.0	CPXV GerMygEK938/17, CPXVGer2010MKY	100.0		
NoH2-I	75455	75643	CPXV078A	96.77	CPXV GerMygEK938/17, CPXVGer2010MKY	98.4	CPXV GerMygEK938/17, CPXVGer2010MKY	99.5		
NoH2-J	91226	91435	CPXV096	100	AKMV, CMLV, CPXV, VACV	100.0	CPXV,VACV	100.0		
NoH2-K	109530	109703	CPXV116	94.12	CPXV, VACV	96.1	CPXV	98.3		
NoH2-L	112614	112856	CPXV119A	100	CPXV	100.0	CPXV,OPXVA	99.2		
NoH2-M	124280	124498	CPXV130	100	CPXV	100.0	CPXV	99.5		
NoH2-N	139869	139985	-	-	VACV CEyV1	94.7	CPXV, VACV	100.0		
NoH2-O	144031	144159	CPXV152A	95.24	CPXV	97.6	CPXV,TATV, VARV	100.0		
NoH2-P	154705	154911	CPXV160	88.24	CPXV Ger2010MKY	97.1	CPXV Ger2010MKY	98.6		
NoH2-Q	160152	160364	CPXV170	94.34	CPXV	100.0	CPXV	99.4		
NoH2-R	179029	179130	-	-	VACV Lister	97.0	VACV_VK01	99.0		
NoH2-S	200439	200600	CPXV214	84	CPXV Ger2010MKY	94.0	CPXV Ger2010MKY	97.5		
NoH2-T	218432	218641	CPXV004	74.65	CPXV	76.1	CPXV GerMygEK938/17	98.1		

Supplementary Table S3. Predicted overlapping genes in CPXV-No-H2 and BLAST analysis.

Supplementary Table S4. BLASTn analysis of predicted genes in CPXV-No-H2 that encode proteins with highest aminoacid similarity to other OPXV proteins than CPXV proteins.

CDS Start Stop Longth		BLASTp			BLASTn			
CDS	CDS Start Stop		Length (op)	<b>OPV</b> Genome with Highest Identity	Aminoacid identity (%)	OPV Genome with Highest Identity	Nucleotide identity (%)	
NoH2-077	75843	75950	108	ECTV, HSPV, VACV	100.0	CPXV GerMygEK938/17	100.0	
NoH2-079	76910	77128	219	AKPV	98.592	AKPV	98.2	
NoH2-090	88183	89487	1305	VACV WAU86/88-1	99.5	CPXV GerMygEK938/17	99.2	
NoH2-152	147351	150845	3495	ECTV	99.828	ECTV	98.9	
NoH2-153	150838	154107	3270	ECTV*	94.82	ECTV	98.3	
NoH2-159	157663	157791	129	VACV	100	BPXV, CPXV , VACV	100	
NoH2-160	157790	158170	381	VACV	98.425	VACV LC16m8, VACV LC16mO	98.4	
NoH2-163	159655	160161	507	ECTV	97.6	CPXV Ger2010MKY, CPXV GerMygEK938/17	98.6	
NoH2-165	160801	161481	681	AKPV	92.92	AKPV	95.2	
NoH2-166	161546	162340	795	AKPV	98.485	AKPV	99.1	
NoH2-167	162451	162630	180	AKPV	98.305	AKPV	99.4	
NoH2-171	165294	165971	678	ECTV	95.556	ECTV_Mill-Hill, ECTV_Hampstead-Egg	95.9	
NoH2-172	166133	166537	405	ECTV	100	ECTV	99.8	
NoH2-173	166577	167188	612	ECTV	99.507	ECTV	99.7	
NoH2-174	167207	167431	225	AKPV	97.297	AKPV	98.7	
NoH2-175	167586	168626	1041	AKPV	95.1	CPXV GerMygEK938/17, CPXV Ger2010MKY	94.4	
NoH2-210	204592	210315	5724	AKPV	94.905	AKPV	97.2	

Supplementary Table S5. Position of the putative recombinant regions in the CPXV-No-H2 genome and BLASTn analysis

Putative recombination	CPXV-No-H2	genome	BLASTn			
event	Start	End	OPXV Genome with Highest Identity	Identity (%)		
1	76946	77205	AKPV	98.33		
2	77741	78243	AKPV	98.21		
3	150156	154530	AKPV	96.89		
4	160786	162936	AKPV	97.66		
5	165874	168063	AKPV	97.37		
6	204966	209636	AKPV	98.42		
7	150119	153968	ECTV	97.93		
8	165847	167892	AKPV	97.29		
9	164405	164766	VACV	99.44		

Paper II





# Article Genomic Sequencing and Phylogenomics of Cowpox Virus

Diana Diaz-Cánova <sup>1</sup>, Carla Mavian <sup>2</sup>, Annika Brinkmann <sup>3</sup>, Andreas Nitsche <sup>3</sup>, Ugo Moens <sup>1,\*</sup>, and Malachy Ifeanyi Okeke <sup>4,\*</sup>

- <sup>1</sup> Molecular Inflammation Research Group, Department of Medical Biology, UiT—The Arctic University of Norway, N-9037 Tromsø, Norway
- <sup>2</sup> Emerging Pathogens Institute, Department of Pathology, College of Medicine, University of Florida, Gainesville, FL 32610, USA
- <sup>3</sup> Highly Pathogenic Viruses, Centre for Biological Threats and Special Pathogens, WHO Reference Laboratory for SARS-CoV-2 and WHO Collaborating Centre for Emerging Infections and Biological Threats, Robert Koch Institute, 1335 Berlin, Germany
- <sup>4</sup> Section of Biomedical Sciences, Department of Natural and Environmental Sciences,
  - School of Arts and Sciences, American University of Nigeria, Yola PMB 2250, Nigeria
- \* Correspondence: ugo.moens@uit.no (U.M.); malachy.okeke@aun.edu.ng (M.I.O.)

**Abstract:** *Cowpox virus* (CPXV; genus *Orthopoxvirus*; family *Poxviridae*) is the causative agent of cowpox, a self-limiting zoonotic infection. CPXV is endemic in Eurasia, and human CPXV infections are associated with exposure to infected animals. In the Fennoscandian region, five CPXVs isolated from cats and humans were collected and used in this study. We report the complete sequence of their genomes, which ranged in size from 220–222 kbp, containing between 215 and 219 open reading frames. The phylogenetic analysis of 87 orthopoxvirus strains, including the Fennoscandian CPXV isolates, confirmed the division of CPXV strains into at least five distinct major clusters (CPXV-like 1, CPXV-like 2, VACV-like, VARV-like and ECTV-Abatino-like) and can be further divided into eighteen sub-species based on the genetic and patristic distances. Bayesian time-scaled evolutionary history of CPXV was reconstructed employing concatenated 62 non-recombinant conserved genes of 55 CPXV. The CPXV evolution rate was calculated to be  $1.65 \times 10^{-5}$  substitution/site/year. Our findings confirmed that CPXV is not a single species but a polyphyletic assemblage of several species and thus, a reclassification is warranted.

**Keywords:** phylogenetic; orthopoxvirus; poxviridae; molecular clock; Fennoscandian; phylodynamics; cowpox virus

## 1. Introduction

*Cowpox virus* (CPXV) is an orthopoxvirus species, belonging to the subfamily *Chor-dopoxvirinae* of the family *Poxviridae* [1]. Orthopoxvirus (OPXV) comprises several species from the New World and Old World. The most representative species from the New World are raccoonpox virus (RCNV), volepox virus (VPXV) and skunkpox virus (SKPV) [2]. Within Old World OPXV, there are several species: ectromelia virus (ECTV), vaccinia virus (VACV), monkeypox virus (MPXV), variola virus (VARV), taterapox virus (TATV), camelpox virus (CMLV) and CPXV [3–5]. In the last decade, new OPXV species were discovered in the United States (alaskapox virus, AKPV), Italy (abatino macacapox virus, Abatino) and Georgia (akhmeta virus, AKMV) [6–8].

The most notable member of OPXV genus is VARV, the etiologic agent of smallpox. However, after a large, massive vaccination campaign, smallpox was eradicated in 1980 [9]. The last natural cases of smallpox in humans were in Somalia in 1977 [10]. OPXV species, such as CPXV and MPXV, can cause zoonotic diseases [11–14]. MPXV and CPXV are the causative agents of monkeypox and cowpox, respectively, and have a wide host range [13,15]. Recently, a multi-country human monkeypox outbreak in 50 countries has been reported [16]. Compared to MPXV that occurs in Central and Western Africa [17],



Citation: Diaz-Cánova, D.; Mavian, C.; Brinkmann, A.; Nitsche, A.; Moens, U.; Okeke, M.I. Genomic Sequencing and Phylogenomics of Cowpox Virus. *Viruses* **2022**, *14*, 2134. https://doi.org/10.3390/ v14102134

Academic Editor: Stefan Rothenburg

Received: 17 August 2022 Accepted: 24 September 2022 Published: 28 September 2022

**Publisher's Note:** MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



**Copyright:** © 2022 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (https:// creativecommons.org/licenses/by/ 4.0/). CPXV is endemic of Eurasia, mainly present in Europe [12,18–23]. The natural reservoirs of CPXV are wild rodents [18,24]. Nevertheless, CPXV is also able to infect felines, monkeys, dogs, alpacas, rats, horses and humans [12,25–29]. The first zoonotic case was reported in the Netherlands in 1985, where CPXV was transmitted from a domestic cat to a woman [30]. In Fennoscandian, human cases of CPXV infections have been reported (CPXV-No-H1, CPXV-No-H2, CPXV-Swe-H1 and CPXV-Swe-H2) as well as feline cases (CPXV-No-F1 and CPXV-No-F2) [27,31–35]. CPXV has been classified as a single species; however, it has been proposed that CPXV should be considered as a polyphyletic species [33,35–40]. Based on phylogenetic studies, CPXV was divided into at least five clades: CPXV-like 1, CPXV-like 2, ECTV-Abatino-like, VACV-like and VARV-like [38,40–42]. Among OPXV, CPXV has the largest genome [43] and contains the highest number of orthopoxviral genes [42,44]. It was suggested that CPXV-like virus was the ancestor of Old World OPXV, except for AKPV and AKMV [39,44,45]. Until now, the evolutionary history of CPXV is still unclear. Most studies have focused on the molecular evolution of VARV, but few studies were focused on OPXV and, specially, on CPXV [39,45–49].

In this study, we present the whole genome sequence of five Fennoscandian CPXV isolates. We determined the phylogenetic relationship of CPXV, including the Fennoscandian isolates, with other OPXV and studied the evolutionary history of CPXV based on the concatenated 62 non-recombinant conserved genes of several representatives CPXV isolates from the different CPXV clades. Furthermore, we propose a new classification of CPXV.

#### 2. Materials and Methods

#### 2.1. Cell, Virus Culture and DNA Isolation

Five Fennoscandian isolates were used in this study: CPXV-No-H1, CPXV-No-F1, CPXV-No-F2, CPXV-Swe-H1 and CPXV-Swe-H2. The isolates were cultured on a monolayer of Vero cells (ATCC No. CCL-81), and the viral DNA was extracted from semi-purified virions, as previously described [34,40]. The origin of the five CPXV isolates has been described elsewhere [27,31–34].

#### 2.2. Whole Genome Sequencing, Genome Assembly and Genome Annotation

The genomes of the five Fennoscandian isolates (CPXV-No-H1, CPXV-No-F1, CPXV-No-F2, CPXV-Swe-H1 and CPXV-Swe-H2) were sequenced using Oxford Nanopore Technology GridION (ONT; Oxford, UK) and Illumina MiSeq using reagent kit v3 with  $2 \times 300$  bp paired-end reads, as previously described [40]. Illumina sequencing was performed at the Norwegian Sequencing Centre, Oslo, and Nanopore sequencing was performed at the Genomics Support Centre Tromsø at UiT—The Arctic University of Norway. The genomes were assembled using SPAdes v3.15.3 [50] and annotated with Genome Annotation Transfer Utility (GATU) [51], as previously reported [40].

### 2.3. Gene Content Comparison

The five Fennoscandian CPXV genomes were compared to CPXV-Br genome. Predicted CDS from five CPXV isolates were extracted, translated into amino acid sequences and compared to the CPXV-Br proteins using BLASTp (ncbi-blast+ v2.11.0) [52].

### 2.4. Phylogenetic Analysis, Patristic and Genetic Distances

A total of 87 OPXV genomes, including the five Fennoscandian genomes, were used in this study (Table S1). Eighty-two OPXV genomes were retrieved from the Viral Orthologous Clusters (VOCs) database [53], with the exception of CPXV\_GerMygEK938\_17 (retrieved from GenBank). The genes and genomes were aligned using MAFFT v7.450 (with default parameters) [54], as implemented in Geneious Prime 2022.0.2. Four different alignments were used to build the phylogenetic trees: (1) 87 OPXV whole genome alignment, (2) 87 OPXV core genome alignment, (3) OPXV orthologous gene alignment (Table S2) and (4) 62 conserved genes alignment (Table S3), as previously described [40]. Recombination detection program 4 (RDP4) [55] was used to detect genome-wide recombination in the datasets. Recombination events identified by 5 of 7 methods (RDP [56], GENECONV [57], Bootscan [58], MaxChi [59], Chimaera [60], SiScan [61] and 3Seq [62]) with significant *p*-values ( $p \le 0.01$ ) were considered credible evidences of recombination. Whole genome, core genome and orthologous gene alignments were generated without removing the putative recombinant regions.

The conserved gene alignment was generated by examining the 90 Chordopoxvirus (ChPV) conserved genes for recombination using RDP4 [55], as described above. The 62 conserved genes identified as non-recombinant were aligned singly and the 62 single gene alignments were concatenated to generate the conserved gene dataset.

Gblocks 0.91b was used to remove poorly aligned positions from 87 OPXV whole and core genome alignments [63]. The presence of phylogenetic signal of the datasets was assessed by likelihood mapping analysis with the evaluation of 2000 random quartets using IQ-TREE v.2.0.3. [64] (Figure S1). The best-fit nucleotide substitution model for the alignment data was selected using the modelTest-NG v.0.1.6 [65]. Two inference methods, maximum likelihood (ML) and Bayesian inference (BI), were conducted with RAxML v8.2.12 [66] using a rapid bootstrap algorithm [67] and MrBayes v3.2.7 [68], respectively, as previously described [40]. The Markov Chain Monte Carlo (MCMC) analysis was run until reaching convergence. The phylogenetic trees were visualized applying FigTree v1.4.4 (http://tree.bio.ed.ac.uk/software/figtree/, accessed on 19 February 2021). The BI phylogenetic tree based on the OPXV orthologous genes was not built because MCMC analysis did not reach convergence after 50,000,000 generations.

Patristic distances between different groups were calculated from the ML/BI trees of concatenated 62 conserved non-recombinant genes using the program Patristic version 1.0 [69]. The genetic distances between the different groups were estimated by p-distances, as implemented in MEGA version 11 [70]. For patristic and genetic distances, the distances were averaged across taxa to produce a single value. The genetic and patristic distances between TATV and CMLV were used as threshold values since they are closest and distinct OPXV species. These threshold values were used to compare the distance between CPXV clusters and OPXV species and separate them in different sub-species if they were equal or greater than TATV-CMLV threshold values.

#### 2.5. Phylodynamic Evolutionary Analysis of CPXV

A Bayesian MCMC inference method implemented in BEAST 1.10.4 [71] was used to estimate evolutionary rates and the divergence times. Evolutionary analysis was carried out on alignment of concatenated 62 conserved non-recombinant genes of 55 CPXV strains (listed in Table S4). The temporal signal was assessed from the ML tree of 62 conserved genes of 55 CPXV by regression of genetic divergence (root-to-tip genetic distance) and the sampling date using TempEst v.1.5.3 [72] (Figure S2). In the analysis, we did not include other OPXV species because the dataset did not contain temporal signal (correlation coefficient = -0.15, value of R2 = 0.02). The presence of phylogenetic signal of the dataset was evaluated using IQ-TREE v.2.0.3. [64], as described above (Figure S2).

The Bayesian phylodynamic analysis was calibrated using the following parameters: log-normal relaxed clock, coalescent Bayesian skyline population, HKY substitution model and four gamma categories. MCMC chain was run for 1 billion generations. The effective sampling size (ESS) values were checked in Tracer v1.7.2 [73]. Only the Effective Sampling Size (ESS) values > 200 (after burn-in) were accepted. The maximum clade credibility (MCC) tree was generated using TreeAnnotator v1.10.4, visualized using FigTree v1.4.4 and edited graphically using the ggtree package available in R [74].

## 3. Results

## 3.1. Genome Assembly, Genome Annotation and Gene Content

The whole genomes of five Fennoscandian CPXV isolates (CPXV-No-H1, CPXV-No-F1, CPXV-No-F2, CPXV-Swe-H1 and CPXV-Swe-H2) were assembled, and the coverage of the

assembled genomes varied from 300X to 2400X, as shown in Table 1. The genome size of the Fennoscandian CPXV isolates ranges from 220,808 to 222,178 bp and the length of inverted terminal repeats (ITRs) were approximately 8 kbp (Table 1). The whole genome sequences of these isolates are available in GenBank, with Accession Number: OP125537, OP125538, OP125539, OP125540, OP125541.

**Table 1.** Genome size, number of predicted coding sequences (CDS) and genome coverage of the Fennoscandian CPXV isolates sequenced in this study.

Name	Genome Size (bp)	CDS	Genome	Coverage
		CDU	Illumina	Nanopore
CPXV-No- H1	221,926	215	300X	600X
CPXV-No-F1	221,334	217	820X	1519X
CPXV-No-F2	222,178	217	940X	1480X
CPXV-Swe- H1	220,981	217	700X	2500X
CPXV-Swe- H2	220,808	217	990X	2400X

Gene annotation of the five Fennoscandian CPXV genomes (CPXV-No-H1, CPXV-No-F1, CPXV-No-F2, CPXV-Swe-H1 and CPXV-Swe-H2) revealed 212, 219, 217, 217 and 217 predicted coding sequences (CDS), respectively. A comparison of the predicted CDS of the five Fennoscandian CPXV isolates with the CPXV-Br genome is shown in Table S5. The genome content of the five Fennoscandian CXPV isolates was similar to CXPV-Br genome. The majority of predicted CDS of the five CXPV strains were found to have homologs in CPXV-Br, except for few predicted CDS. *NoF1-009, NoF2-009* and *NoH1-008,* present in the Norwegian isolates, were homologs of *EVM004* that encodes a BTB Kelch-domain containing protein. The Swedish isolates contain a CDS (*SweH1-210* and *SweH2-210*) that was homolog of *CPXV-GRI-K3R* (codes for CrmE protein). The five Fennoscandian isolates contain a homolog of *VACV-Cop O3L*, encoding a virus entry/fusion complex component.

The five Fennoscandian CPXV strains lacked homologs of *CPXV001* and *CPXV216*. Furthermore, *CPXV002* and *CPXV191* (*CrmC*) were absent in CPXV-No-H1 and CPXV-No-F1 genomes, respectively.

#### 3.2. Phylogenetic Analysis

The recombination analysis evidenced the extensive recombination in OPXV core genomes (Figure S3) as well as in the datasets of OPXV whole genomes and orthologous genes (data not shown). Recombination regions were not removed from the alignments used to generate the phylogenetic trees for the whole genome, core genome and orthologous genes. To examine if the recombinant regions in the three datasets biased the phylogenetic signal, we generated some fourth data, in which 62 OPXV conserved genes without any evidence of recombination were used in phylogenetic reconstruction, as described in methods. The ML and BI phylogenetic trees built from concatenated 62 conserved genes without recombination is shown in Figure 1 and Figure S4, respectively.

The topology of the phylogenetic trees based on 87 OPXV core genomes (Figure 2 and Figure S5) was identical to that of trees generated from 87 OPXV whole genomes (Figures S6 and S7) and similar to that of the phylogenetic tree built based on OPXV orthologous genes (Figure S8). Whereas the topology of phylogenetic trees based on 62 conserved genes (Figure 1 and Figure S4) slightly differed from that of the phylogenetic trees generated from 87 OPXV core genomes (Figure 2 and Figure S5).



0.03

**Figure 1.** Maximum likelihood phylogenetic tree of 62 conserved genes from 87 orthopoxviruses. Bootstrap values were inferred from 1000 rapid bootstrap replicates. Diamonds at the nodes indicate bootstrap values > 80%. The scale indicates substitution per site. The main five cowpox virus (CPXV) clusters were highlighted in different colors: pink (Ectromelia-Abatino-like CPXV), blue (CPXV-like 1), green (CPXV-like 2), turquoise blue (Vaccinia-like CPXV) and orange (Variola-like CPXV).



0.03

**Figure 2.** Maximum likelihood phylogenetic tree of 87 orthopoxvirus core genome. Bootstrap values were inferred from 1000 rapid bootstrap replicates. Diamonds at the nodes indicate bootstrap values > 80%. The scale indicates substitution per site. The main five cowpox virus (CPXV) clusters were highlighted in different colors: pink (Ectromelia-Abatino-like CPXV), blue (CPXV-like 1), green (CPXV-like 2), turquoise blue (Vaccinia-like CPXV) and orange (Variola-like CPXV).

As expected, in all phylogenetic trees, the New World and Old World OPXV were separated and AKPV and AKMV clades were placed between them (Figure 1, Figure 2 and Figures S4–S8). Within the Old OPXV, the strains from the same species formed distinct clades, except for CPXV strains. They formed separated clusters with different OPXV species such as VACV, VARV, ECTV and Abatino. CPXV isolates were separated in five clusters: ECTV-Abatino-like CPXV, CPXV-like 1, CPXV-like 2, VACV-like CPXV and VARVlike CPXV. Even though CPXV strains from VACV-like did not form a cluster, they were closely related to VACV clade. ECTV/Abatino group was clustered with ECTV-Abatinolike clade, which includes one Fennoscandian isolate (CXPV-No-H2) and two German isolates. ECTV/Abatino/ECTV-Abatino-like CPXV clade clustered with a major clade that contains: CPXV-like 2, CPXV-like 1, VACV-like, VACV, MPXV, VARV-like, VARV, TATV and CMLV clusters (PP = 1.0 and bootstrap values = 100%). In the phylogenetic trees based on 87 OPXV core genomes (Figure 2 and Figure S5), CPXV-like 2 was separated from the other CPXV clusters and OPXV. Furthermore, CPXV-like 1 clade was sister to a major clade that comprised VACV-like, VACV, MPXV, VARV-like, TATV, CMLV and VARV (PP = 1.0 and bootstrap values = 100%). Within this major clade VACV-like/VACV/MPXV cluster was separated from VARV-like, TATV, CMLV and VARV. Whereas the phylogenetic trees generated from 62 conserved genes (Figure 2 and Figure S6) showed that CPXV-like 1 and

CPXV-like 2 were sister clades (PP = 1 and bootstrap values = 70%) and these clustered together with a clade that contains VACV-like, VACV, MPXV, VARV-like, VARV, TATV and CMLV, but with low bootstrap support (48%) and PP of 0.93. In comparison to a phylogenetic tree built from 87 OPXV core genomes, VACV-like/VACV/MPXV did not form separate from VARV-like.

All Fennoscandian CPXV isolates except CPXV-No-H2 were grouped into CPXV-like 2 clade (Figure 1, Figure 2 and Figures S4–S8). This clade also contains CPXV strains from Germany, Denmark, Russia, The United Kingdom (UK) and France. Within CPXV-like 2, CPXV-Ger1998\_2 formed a deeper single branch and the remaining CPXV isolates were divided in two main sub-clusters. In the phylogenetic trees built from 87 OPXV core genomes (Figure 2 and Figure S5), the sub-cluster one contained three German isolates (CPXV\_Ger91, CPXV\_Ger2007\_Vole and CPXV\_FM2292) and sub-cluster two comprised 16 CPXV isolates, including the five Fennoscandian CPXV isolates reported in this study (CPXV\_Ger2014\_Human, CPXV\_Ger2015\_cat1, CPXV\_Ger1990\_2, CPXV\_HumLue09\_1, CPXV\_CheNova\_DK\_2014, CPXV-Swe-H1, CPXV-Swe-H2, CPXV-Fra2001-Nancy, CPXV-FraAmiens\_2016, CPXV-Catpox5-wv1, CPXV-Br, CPXV-No-F1, CPXV-Norwayfeline, CPXV-No-F2, CPXV-No-H1 and CPXV-Nor1994\_Man). Whereas sub-cluster one of the phylogenetic tree based on 62 conserved genes contained an additional CPXV strain, CPXV\_Ger0214 \_Human (Figure 1 and Figure S4). In all phylogenetic trees, the Norwegian isolates were closely related to the UK isolates (CPXV-Br and CPXV- Catpox5\_wv1), while Swedish isolates were closer to the Danish isolate. CPXV-like 1 clade was the largest CPXV clade and comprises only German CPXV isolates as well as VARV-like clade. This clade was sister group of VARV/CMLV/TATV. VACV-like contains CPXV strains from Austria, Russia, Finland and Lithuania. These strains were closely related to VACV and MPXV. Compared to VACV-like, VARV-like and ECTV-Abatino-like, CPXV-like 1 and CPXV-like 2 did not cluster together with other OPXV species (Figure 1, Figure 2 and Figures S4–S8). Overall, all phylogenetic trees (based on 87 OPXV whole genomes, core genomes, orthologous genes and conserved genes) showed the five major CPXV clusters and the clustering of the CPXV-like 2 strains were similar. Thus, although recombination among CPXV is extensive, tree topology from datasets with recombinant regions and datasets without evidence of recombination were very similar.

### 3.3. Patristic and Genetic Distances

Based on the genetic and patristic distances, CPXV strains can be classified into 18 sub-species (Figure 3). The genetic and patristic distances between CPXV clusters and OPXV species were higher than the TATV-CMLV genetic and patristic distance threshold (Tables S6 and S7). Furthermore, the genetic and patristic distances within some CPXV clusters, such as CPXV-like 2, were higher than the threshold values (Table S8). According to the genetic and patristic distances between CPXV-like 2 strains, CPXV-like 2 was further divided into ten sub-species: group one (CPXV-Ger1998\_2), group two (CPXV\_Ger2014\_Human, CPXV\_Ger91, CPXV\_Ger2007\_Vole and CPXV\_FM2292), group three (CPXV\_HumLue09\_1), group four (CPXV\_Ger1990\_2), group five (CPXV\_Ger2015\_cat1), group six (CPXV-Fra2001-Nancy), group seven (CPXV-FraAmiens\_2016), group eight (CPXV\_CheNova\_DK\_2014, CPXV-Swe-H1 and CPXV-Swe-H2), group nine (CPXV-Catpox5-wv1 and CPXV-Br) and group ten (CPXV-No-F1, CPXV-Norwayfeline, CPXV-No-F2, CPXV-No-H1 and CPXV-Nor1994\_Man) (Tables S9 and S10). The isolates were grouped together according to their origin, except for the German and French isolates that were separated into five and two distinct sub-species, respectively.



0.03

**Figure 3.** New classification of cowpox virus (CPXV) based on phylogenetic tree inference from 62 conserved genes without evidence of recombination, patristic and genetic distances. Diamonds at the nodes indicate bootstrap values > 80%. The main five CPXV clusters were highlighted in different colors: pink (Ectromelia-Abatino-like CPXV), blue (CPXV-like 1), green (CPXV-like 2), turquoise blue (Vaccinia-like CPXV) and orange (Variola-like CPXV).

Similarly, in the ECTV-Abatino-like clade, the genetic and patristic distances between the Norwegian human isolate, CPXV-No-H2, and the German isolates (CPXV\_GerMygEk938\_17 and CPXV\_Ger201\_MKY) exceeded the distances between TATV and CMLV (Table S11). Within VACV-like, the distances between the CPXV strains were higher than the threshold values, except for the distances between CXPV-Gri and CPXV-Fin2000-Man (Tables S12 and S13). VACV-like strains were divided into three different sub-species: sub-species one, CPXV\_HumLit08\_1;

sub-species two, CPXV\_Aus\_1999; sub-species three, CPXV\_Gri and CPXV\_Fin2000\_Man (Figure 3). In CPXV-like 1, CPXV\_Ger\_1971\_EP1 was classified as one sub-species and the remaining CPXV-like 1 strains as another sub-species, according to the genetic and patristic distances (Table S14). However, the patristic distances between CPXV\_Ger2010\_Alpaca and other CPXV-like 1 strains were higher than the threshold value, but some genetic distances were lower than the threshold values (Tables S15 and S16). VARV-like strains remained together as one sub-species based on the genetic and patristic distances and phylogeny. Curiously, these strains contain a genomic region of approximately 5860 bp that was also identified in some CPXV-like 2 strains (CPXV\_Ger91, CPXV\_2007\_vole, CPXV\_FM2291 and CPXV\_Fra2001\_Nancy), VARV and CMLV.

#### 3.4. Evolutionary Analysis of CPXV

The phylodynamic analysis was performed based on the 62 conserved genes of CPXV genomes. The dataset exhibited a positive correlation between the genetic divergence and the sampling time, which indicates the presence of temporal signal in the sequence dataset (correlation efficient = 0.48; R2 = 0.23). The mean evolution rate of CPXV was estimated to be  $1.65 \times 10^{-5}$  substitutions per site per year (subs/site/year), with 95% high posterior density interval (HPD) of  $4.36 \times 10^{-7} - 4.32 \times 10^{-5}$  subs/site/year.

The MCC tree showed that CPXV strains were divided into two main clusters (Figure S9). The minor cluster contained CPXV-like 2 clade (PP = 0.88) and the major cluster comprised ECTV-Abatino-like, VACV-like, VARV-like and CXPV-like 1 clades (PP = 0.89) (Figure S9). However, the emergence date of CPXV as well as major CPXV clusters could not be accurately estimated since the 95% HPD intervals were wide, especially in the deepest nodes. As compared to the 95% HPD intervals tMRCA for recent nodes, tMRCA for deeper internal nodes were quite broad and showed some degree of overlap.

#### 4. Discussion

CPXV strains examined in this study were isolated from different countries in Eurasia, with most of CPXV isolates from Germany. We included five CPXV isolates collected from Fennoscandian as well as our previously published CPXV isolate, CPXV-No-H2 [40]. These five Fennoscandian isolates were previously classified as CPXV based on Hind III restriction map of virus DNA, phylogenetic analysis of multiple conserved genes and the possession of two copies of the intact *cytokine response modifier B* (*CrmB*) gene [33–35].

CPXV is classified as one species, but this has been debated in many studies due to its genetic heterogeneity and polyphyletic character [33,35–40]. The genetic heterogeneity among CPXV strains could be due to recombination processes [34,35,41] since it is part of the evolution of OPXV [8,34,40,41,43,75–79]. It has been suggested that recombination can affect the accuracy of the phylogenetic inferences [80]. Since the extensive recombination in OPXV genomes has been reported by others [41], we included in our study a dataset of 62 non-recombinant conserved genes to avoid inaccuracy of phylogenetic estimation due the presence of recombination in 87 OPXV whole genomes, core genomes and orthologous genes.

Our phylogenetic analysis using different datasets always showed that CPXV isolates were divided into at least five clusters: CPXV-like 1, CPXV-like 2, VACV-like CPXV, VARV-like CPXV and ECTV-Abatino-like CPXV (Figure 1, Figure 2 and Figures S3–S7). Similar phylogenetic clustering of CPXV has been reported in other studies [40,81]. Three of the five CPXV clusters were closely related to other OPXV species, such as ECTV, Abatino, VARV and VACV. Previous studies have also showed this phylogenetic relationship of CPXV with other OPXV [35,37,38,40,41,43,81].

The German isolates were present in all CPXV clusters, except for VACV-like, while the Fennoscandian CPXV isolates clustered into CPXV-like 2 and grouped into separate clusters according to their country of origin (Norway, Sweden and Denmark), except for CPXV-No-H2. These results are in agreement with the phylogenetic analysis based on single genes (*atip*, *p4c*, *CrmB*, *HA*, complete *CHOhr* or partial *CHOhr*) reported in our previous studies [33,35]. However, not all Fennoscandian isolates were closely related. The Norwegian isolates were closely related to the UK strains, whereas the Swedish CPXV isolates were closer to the Danish CPXV isolate. The phylogenetic relationship of the Norwegian and UK isolates has been previously reported [38,41]. In our previous studies the relationship of the Fennoscandian isolates with other CPXV isolates varied depending on the single gene used in the phylogenetic analysis [33,35]. However, in the present study, the phylogenetic relationship between the Norwegian and UK isolates as well as the Swedish and Danish isolates were consistent, regardless of the alignment used (87 OPXV whole genomes, core genomes, orthologous genes or 62 conserved genes).

Genetic and patristic distances have been previously used to examine the diversity of CPXV [35,36,38]. We used the genetic and patristic distances between TATV and CMLV to classify OPXV into the same or different species because they are the closest and recognized OPXV species. Our examination of the genetic and patristic distances between and within CPXV clusters revealed that the five CPXV clusters can be considered distinct CPXV subspecies and that even the CPXV strains can be separated into 18 sub-species (Figure 3). The heterogeneity of CPXV was not only demonstrated between CPXV clusters, but it was also present within some clusters. Among them, CPXV-like 2 was the most heterogeneous. Their isolates were classified into ten sub-species based on the genetic and patristic distances. This clade comprised isolates of diverse geographic origins (Norway, Sweden, Denmark, UK, Germany and France) and its classification followed their geographical origin. Only German and French isolates were separated into more than one sub-species.

Large genetic variation was also found within VACV-like strains, which were closely related to VACV and MPXV, as previously described [38,40,41]. These strains split into three different sub-species based on the genetic and patristic distances. This division is in agreement with phylogenetic work reported in other previous studies [38,40,41]. Among VACV-like strains, it has been reported that CPXV-HumLit08/1 is a recombinant virus that contains genomic regions related to VACV, VACV-like and VARV-like [41]. However, our findings based on 62 non-recombinant conserved genes evidenced that CPXV-HumLit08/1 can be considered as one sub-species. Similarly, within ECTV-Abatino-like clade, CPXV-No-H2 has undergone recombination with other OPXV [40] and our data supported the separation of CPXV-No-H2 and the other ECTV-Abatino-like strains into different sub-species.

The most genetically homogeneous CPXV cluster was the VARV-like group. The origin of these strains was associated with infected pet rats, probably imported from the Czech Republic [37,82]. Overall, our findings are in concordance with the results of Mauldin et al. [38]. They reported that CPXV-like 1 strains were split into more than one cluster (referred in the study as E1, E2, E3, E4 and E5), VACV-like strains were divided into three groups (referred in the study as A, B and C) and VARV-like strains were clustered into a single group.

Despite the evidence of recombination in the datasets of 87 OPXV whole genomes, core genomes and orthologous genes, their phylogeny, genetic and patristic distances agreed with and are very similar to the phylogeny, patristic and genetic distances reconstructed from the dataset of 62 conserved genes without evidence of recombination. All four datasets suggested that CPXV strains can be divided into at least 18 sub-species (Figure 3, Figure S10 and Tables S6–S16). However, biological characterization of CPXV is required to accurately infer the taxonomic level to which these 18 sub-species of CPXV belong. Furthermore, our phylogenetic analysis evidenced that recombination did not change the phylogenetic relationship between CPXV strains and OPXV despite the extensive recombination between OPXV genomes. Taking into cognizance the extensive recombination present in CPXV genomes, it is rather surprising that recombination appears not to alter the clustering pattern in OPXV phylogeny. Plausible reasons may be that recombination among CPXVs occurred very early in CPXV/OPXV evolution, recombination regions occurred in small batch sizes compared to the whole genomes and the phylogenetic signals from recombinant regions were small and was diluted out by larger phylogenetic signals from other parts of the genome.

We estimated the evolution rate of CPXV based on 62 conserved genes of 55 CPXV to be  $1.65 \times 10^{-5}$  substitution/site/year (95% HPD,  $4.36 \times 10^{-7}$ – $4.32 \times 10^{-5}$  subs/site/year). The 95% HPD of our estimate overlapped the reported substitution rates of Chordopoxvirinae,  $0.5-8.8 \times 10^{-6}$  substitutions/site/year, and OPXV,  $1.7-6.5 \times 10^{-6}$  substitutions/site/year [45–47,49]. The divergence times of CPXV could not be accurately estimated using 62 conserved genes of 55 CPXV genomes (Figure S9), even using conserved central region (F4L-A24L) of CPXV genomes (data not shown), since the broad 95% HPD intervals of the divergence time were quite broad. It could be due to the high heterogeneity of CXPV strains and the limited number of samples in terms of location, host and sample age. The majority of CPXV strains were isolated in Germany and from infections in humans. Furthermore, most CPXV strains were isolated in the last decades, there were no ancient CPXV isolates. Therefore, the low genetic information and the high genetic distances between the current CPXV strains increase the uncertainty of the node ages. In our opinion, our result strengthens the proposed idea that lineages of CPXV are highly divergent and a reclassification is needed, rather than showing a lack of a good calibration (tempest indicated presence of temporal signal). It has been proposed that the CXPV-like virus was the ancestor of Old World OPXV, excluding AKPV and AKMV, [39,44,45,83] due to its large genome, broadest host range and the presence of the most orthopoxviral genes [42,43,83,84]. Thus, despite the exclusion of other OPXV in our analysis due to the lack of temporal signal in the dataset, the evolutionary analysis of only CPXV may reflect the genomic history of all OPXV taking into account the high genetic heterogeneity among CPXV, the suggestion that CPXV or cowpox-like virus may be the ancestor to Old World OPXV species and the phylogenetic evidence of CPXV being the only OPXV that clusters with all Old World OPXV. However, the phylodynamic analysis of only CPXV has limitations because of oversampling of CPXV strains from Germany, from human zoonotic events and lack of ancient isolates. To improve the reconstruction of the evolutionary history of CPXV, increased genomic surveillance of CPXV across different regions of Eurasia and in multiple species or by the acquisition of ancient CPXV strains are required. These will result in a more accurate estimation of the time-scale of CPXV evolution.

## 5. Conclusions

In conclusion, the present study demonstrated the high genetic heterogeneity among CPXV isolates and the polyphyletic character of CPXV. Furthermore, our findings confirmed that CPXV was not a single species but a polyphyletic assemblage of several (up to 18) sub-species. Therefore, the current classification of CPXV as one single species should be re-evaluated. We also provided the first reconstruction of the evolutionary history of only CPXV. Overall, this study has shed significant insight on the evolution, phylogeny and classification of CPXV.

Supplementary Materials: The following supporting information can be downloaded at: https: //www.mdpi.com/article/10.3390/v14102134/s1, Figure S1. Presence of phylogenetic signal was evaluated by likelihood mapping checking for alternative topologies (tips), unresolved quartets (center) and partly resolved quartets (edges) for 87 OPXV whole genomes (a), core genomes (b), OPXV orthologous genes (c) and 62 conserved genes. Figure S2. Phylogenetic and temporal signal analyses. (a) Presence of phylogenetic signal was evaluated by likelihood mapping checking for alternative topologies (tips), unresolved quartets (center) and partly resolved quartets (edges) for 62 conserved genes of 55 CPXV strains. (b) Linear regression of root-to-tip genetic distance in a maximum likelihood phylogeny against sampling time for 62 conserved genes of 55 CPXV strains. Figure S3. Recombination analysis of 87 orthopoxvirus (OPXV) core genomes with RPD4. Schematic sequence display depicting color-coded representations of the analyzed sequences and the locations of detected recombination events in the 87 OPXV core genomes. The detected recombination events were detected for at least 5 of 7 methods (RDP, GENECONV, Bootscan, MaxChi, Chimaera, SiScan and 3Seq) with significant *p*-values ( $p \le 0.01$ ). Figure S4. Bayesian inference phylogenetic tree of 62 conserved genes from 87 orthopoxviruses. Diamonds at the nodes indicate posterior probabilities > 0.9. The scale bar represents expected substitutions per site. The main five cowpox virus (CPXV) clusters were highlighted in different colors: pink (Ectromelia-Abatino-like CPXV), blue (CPXV-like 1), green (CPXV-like 2), turquoise blue (Vaccinia-like CPXV) and orange (Variola-like CPXV). Figure S5. Bayesian inference phylogenetic tree of 87 OPXV core genomes. Posterior probabilities are shown on the right side of each node and only posterior probabilities above 0.9 are shown. The scale bar represents expected substitutions per site. The main five cowpox virus (CPXV) clusters were highlighted in different colors: pink (Ectromelia-Abatino-like CPXV), blue (CPXV-like 1), green (CPXV-like 2), turquoise blue (Vaccinia-like CPXV) and orange (Variola-like CPXV). Figure S6. Maximum likelihood phylogenetic tree of 87 orthopoxvirus whole genome. Bootstrap values were inferred from 1000 rapid bootstrap replicates. Diamonds at the nodes indicate bootstrap values > 80%. The scale bar indicates substitution per site. The main five cowpox virus (CPXV) clusters were highlighted in different colors: pink (Ectromelia-Abatino-like CPXV), blue (CPXV-like 1), green (CPXV-like 2), turquoise blue (Vaccinia-like CPXV) and orange (Variola-like CPXV). Figure S7. Bayesian inference phylogenetic tree of 87 OPXV whole genomes. Diamonds at the nodes indicate posterior probabilities > 0.9. The scale bar represents expected substitutions per site. The main five cowpox virus (CPXV) clusters were highlighted in different colors: pink (Ectromelia-Abatino-like CPXV), blue (CPXV-like 1), green (CPXV-like 2), turquoise blue (Vaccinia-like CPXV) and orange (Variola-like CPXV). Figure S8. Maximum likelihood phylogenetic tree based on orthopoxvirus orthologous genes. Bootstrap values were inferred from 1000 rapid bootstrap replicates. Diamonds at the nodes indicate bootstrap values > 80%. The scale indicates substitution per site. The main five cowpox virus (CPXV) clusters were highlighted in different colors: pink (Ectromelia-Abatino-like CPXV), blue (CPXV-like 1), green (CPXV-like 2), turquoise blue (Vaccinia-like CPXV) and orange (Variola-like CPXV). Figure S9. Bayesian maximum clade credibility (MCC) tree of 62 non-recombinant conserved genes of 55 CPXV genomes. The MCC tree was generated using BEAST 1, using a log-normal relaxed clock, coalescent Bayesian skyline population, HKY substitution model and four gamma categories. The numbers on the nodes indicate the time of the most recent common ancestor of the clades. Diamonds at the nodes indicate posterior probability values > 0.9. The main five CPXV clusters were highlighted in different colors: pink (Ectromelia-Abatino-like CPXV), blue (CPXV-like 1), green (CPXV-like 2), turquoise blue (Vaccinialike CPXV) and orange (Variola-like CPXV). Figure S10. New classification of Cowpox virus (CPXV) based on phylogenetic inference (from 87 OPXV whole genomes, core genomes and orthologous genes), patristic and genetic distances. Diamonds at the nodes indicate bootstrap values > 80%. The main five CPXV clusters were highlighted in different colors: pink (Ectromelia-Abatino-like CPXV), blue (CPXV-like 1), green (CPXV-like 2), turquoise blue (Vaccinia-like CPXV) and orange (Variola-like CPXV). Table S1: List of strains used in the phylogenetic analysis. Table S2: List of orthologous genes from 87 orthopoxviruses used in this study. Table S3: List of 62 conserved genes from 87 orthopoxviruses used in this study. Table S4: List of strains used in the evolution molecular analysis. Table S5. Predicted genes in CPXV-No-F1, CPXV-No-F2, CPXV-No-H1, CPXV-Swe-H1 and CPXV-Swe-H2 compared to reference genomes CPXV-Brighton (CPXV\_BR). Table S6. Patristic distances between CPXV clusters and OPXV species calculated from the Maximum likelihood (ML) and Bayesian inference (BI) trees of 62 conserved genes, 87 OPXV whole genomes, core genomes and orthologous genes. Table S7. Genetic distances between CPXV clusters and OPXV species estimated by p-distances from the alignment of 62 conserved genes (A), 87 OPXV whole genomes (B), core genomes (C) and orthologous genes (D). Table S8. Patristic and genetic distances within CPXV clusters calculated from the Maximum likelihood (ML) and Bayesian inference (BI) trees of 62 conserved genes, 87 OPXV core genomes, whole genomes and orthologous genes and their alignments, respectively. Table S9. Patristic distances within CPXV-like 2 calculated from the Maximum likelihood (ML) and Bayesian inference (BI) trees of 62 conserved genes, 87 OPXV whole genomes, core genomes and orthologous genes. Table S10. Genetic distances within CPXV-like 2 estimated by p-distances from the alignment of 62 conserved genes (A), 87 OPXV whole genomes (B), core genomes (C) and orthologous genes (D). Table S11. Patristic and genetic distances within ECTV-Abatino-like calculated from the Maximum likelihood (ML) and Bayesian inference (BI) trees of 62 conserved genes, 87 OPXV whole genomes, core genomes and orthologous genes and their alignments, respectively. Table S12. Patristic distances within VACV-like calculated from the Maximum likelihood (ML) and Bayesian inference (BI) trees of 62 conserved genes, 87 OPXV whole genomes, core genomes and orthologous genes. Table S13. Genetic distances within VACV-like clade estimated by p-distances from the alignment of 62 conserved genes (A), 87 OPXV whole genomes (B), core genomes (C) and orthologous genes (D). Table S14. Patristic and genetic distances within CPXV-like 1 calculated from the Maximum likelihood (ML) and Bayesian inference (BI) trees of 87 OPXV whole genomes, core

genomes and orthologous genes and their alignments, respectively. Table S15. Patristic distances within CPXV-like 1 calculated from the Maximum likelihood (ML) and Bayesian inference (BI) trees of 62 conserved genes, 87 OPXV whole genomes, core genomes and orthologous genes. Table S16. Genetic distances within CPXV-like 1 estimated by p-distances from the alignment of 62 conserved genes (A), 87 OPXV whole genomes (B), core genomes (C) and orthologous genes (D).

Author Contributions: Conceptualization, D.D.-C., U.M. and M.I.O.; Methodology, D.D.-C., C.M., U.M. and M.I.O.; Supervision, U.M. and M.I.O.; Writing—original draft, D.D.-C., C.M., U.M. and M.I.O.; Writing—review and editing, D.D.-C., C.M., A.N., A.B., U.M. and M.I.O. All authors have read and agreed to the published version of the manuscript.

**Funding:** This research was funded by UiT—The Arctic University of Norway, grant number A212100108 and the National Graduate School in Infection Biology and Antimicrobials, grant number 249062. The APC was funded by UiT—The Arctic University of Norway.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

**Data Availability Statement:** The original contributions presented in the study are publicly available. These data can be found here: https://www.ncbi.nlm.nih.gov/genbank/ (accessed on 2 August 2022), OP125537, OP125538, OP125539, OP125540, OP125541.

Conflicts of Interest: The authors declare no conflict of interest.

#### References

- MacLachlan, N.J.; Dubovi, E.J. (Eds.) Poxviridae. In *Fenner's Veterinary Virology*; Academic Press: Boston, MA, USA, 2017; pp. 157–174. ISBN 9780128009468.
- Smithson, C.; Tang, N.; Sammons, S.; Frace, M.; Batra, D.; Li, Y.; Emerson, G.L.; Carroll, D.S.; Upton, C. The Genomes of Three North American Orthopoxviruses. *Virus Genes* 2017, 53, 21–34. [CrossRef]
- 3. International Committee on Taxonomy of Viruses (ICTV). Available online: https://talk.ictvonline.org/taxonomy/ (accessed on 16 July 2022).
- 4. Gubser, C.; Smith, G.L. The Sequence of Camelpox Virus Shows It Is Most Closely Related to Variola Virus, the Cause of Smallpox. *J. Gen. Virol.* **2002**, *83*, 855–872. [CrossRef] [PubMed]
- Mavian, C.; López-Bueno, A.; Martín, R.; Nitsche, A.; Alcamí, A. Comparative Pathogenesis, Genomics and Phylogeography of Mousepox. *Viruses* 2021, 13, 1146. [CrossRef] [PubMed]
- Cardeti, G.; Gruber, C.E.M.; Eleni, C.; Carletti, F.; Castilletti, C.; Manna, G.; Rosone, F.; Giombini, E.; Selleri, M.; Lapa, D.; et al. Fatal Outbreak in Tonkean Macaques Caused by Possibly Novel Orthopoxvirus, Italy, January 2015. *Emerg. Infect. Dis. J.* 2017, 23, 1941–1949. [CrossRef] [PubMed]
- Springer, Y.P.; Hsu, C.H.; Werle, Z.R.; Olson, L.E.; Cooper, M.P.; Castrodale, L.J.; Fowler, N.; Mccollum, A.M.; Goldsmith, C.S.; Emerson, G.L.; et al. Novel Orthopoxvirus Infection in an Alaska Resident. *Clin. Infect. Dis.* 2017, 64, 1737. [CrossRef] [PubMed]
- Gao, J.; Gigante, C.; Khmaladze, E.; Liu, P.; Tang, S.; Wilkins, K.; Zhao, K.; Davidson, W.; Nakazawa, Y.; Maghlakelidze, G.; et al. Genome Sequences of Akhmeta Virus, an Early Divergent Old World Orthopoxvirus. *Viruses* 2018, 10, 252. [CrossRef] [PubMed]
   Strassburg, M.A. The Global Eradication of Smallpox. *Am. J. Infect. Control* 1982, 10, 53–59. [CrossRef]
- Strassburg, M.A. The Global Eradication of Smallpox. *Am. J. Infect. Control* **1982**, *10*, 53–59. [CrossRef]
   Deria, A.: Jezek, Z.: Markvart, K.: Carrasco, P.: Weisfeld, J. The World's Last Endemic Case of Smallpox: S
- 10. Deria, A.; Jezek, Z.; Markvart, K.; Carrasco, P.; Weisfeld, J. The World's Last Endemic Case of Smallpox: Surveillance and Containment Measures. *Bull. World Health Organ.* **1980**, *58*, 279.
- Vora, N.M.; Li, Y.; Geleishvili, M.; Emerson, G.L.; Khmaladze, E.; Maghlakelidze, G.; Navdarashvili, A.; Zakhashvili, K.; Kokhreidze, M.; Endeladze, M.; et al. Human Infection with a Zoonotic Orthopoxvirus in the Country of Georgia. *N. Engl. J. Med.* 2015, 372, 1223. [CrossRef] [PubMed]
- 12. Diaz, J.H. The Disease Ecology, Epidemiology, Clinical Manifestations, Management, Prevention, and Control of Increasing Human Infections with Animal Orthopoxviruses. *Wilderness Environ. Med.* **2021**, *32*, 528–536. [CrossRef]
- 13. Silva, N.I.O.; de Oliveira, J.S.; Kroon, E.G.; de Souza Trindade, G.; Drumond, B.P. Here, There, and Everywhere: The Wide Host Range and Geographic Distribution of Zoonotic Orthopoxviruses. *Viruses* **2021**, *13*, 43. [CrossRef] [PubMed]
- 14. Alakunle, E.; Moens, U.; Nchinda, G.; Okeke, M.I. Monkeypox Virus in Nigeria: Infection Biology, Epidemiology, and Evolution. *Viruses* **2020**, *12*, 1257. [CrossRef] [PubMed]
- 15. Reynolds, M.G.; Guagliardo, S.A.J.; Nakazawa, Y.J.; Doty, J.B.; Mauldin, M.R. Understanding Orthopoxvirus Host Range and Evolution: From the Enigmatic to the Usual Suspects. *Curr. Opin. Virol.* **2018**, *28*, 108–115. [CrossRef] [PubMed]
- 16. WHO. Disease Outbreak News; Multi-Country Monkeypox Outbreak: Situation Update. Available online: https://www.who. int/emergencies/disease-outbreak-news/item/2022-DON396 (accessed on 9 July 2022).
- 17. WHO. Disease Outbreak News; Multi-Country Monkeypox Outbreak in Non-Endemic Countries. Available online: https://www.who.int/emergencies/disease-outbreak-news/item/2022-DON385 (accessed on 20 June 2022).

- Chantrey, J.; Meyer, H.; Baxby, D.; Begon, M.; Bown, K.J.; Hazel, S.M.; Jones, T.; Montgomery, W.I.; Bennett, M. Cowpox: Reservoir Hosts and Geographic Range. *Epidemiol. Infect.* 1999, 122, 455. [CrossRef] [PubMed]
- Wolfs, T.F.W.; Wagenaar, J.A.; Niesters, H.G.M.; Osterhaus, A.D.M.E. Rat-to-Human Transmission of Cowpox Infection. *Emerg. Infect. Dis.* 2002, *8*, 1495. [CrossRef]
- 20. Laakkonen, J.; Kallio-Kokko, H.; Öktem, M.A.; Blasdell, K.; Plyusnina, A.; Niemimaa, J.; Karataş, A.; Plyusnin, A.; Vaheri, A.; Henttonen, H. Serological Survey for Viral Pathogens in Turkish Rodents. J. Wildl. Dis. 2006, 42, 672–676. [CrossRef]
- Vorou, R.M.; Papavassiliou, V.G.; Pierroutsakos, I.N. Cowpox Virus Infection: An Emerging Health Threat. Curr. Opin. Infect. Dis. 2008, 21, 153–156. [CrossRef]
- 22. Popova, A.Y.; Maksyutov, R.A.; Taranov, O.S.; Tregubchak, T.V.; Zaikovskaya, A.V.; Sergeev, A.A.; Vlashchenko, I.V.; Bodnev, S.A.; Ternovoi, V.A.; Alexandrova, N.S. Cowpox in a Human, Russia, 2015. *Epidemiol. Infect.* **2017**, *145*, 755–759. [CrossRef]
- 23. Ferrier, A.; Frenois-Veyrat, G.; Schvoerer, E.; Henard, S.; Jarjaval, F.; Drouet, I.; Timera, H.; Boutin, L.; Mosca, E.; Peyrefitte, C.; et al. Fatal Cowpox Virus Infection in Human Fetus, France, 2017. *Emerg. Infect. Dis.* **2021**, *27*, 2570–2577. [CrossRef]
- 24. Kinnunen, P.M.; Henttonen, H.; Hoffmann, B.; Kallio, E.R.; Korthase, C.; Laakkonen, J.; Niemimaa, J.; Palva, A.; Schlegel, M.; Ali, H.S.; et al. Orthopox Virus Infections in Eurasian Wild Rodents. *Vector-Borne Zoonotic Dis.* **2011**, *11*, 1133–1140. [CrossRef]
- Girling, S.J.; Pizzi, R.; Cox, A.; Beard, P.M. Fatal Cowpox Virus Infection in Two Squirrel Monkeys (*Saimiri sciureus*). Vet. Rec. 2011, 169, 156. [CrossRef] [PubMed]
- Smith, K.C.; Bennett, M.; Garrett, D.C. Skin Lesions Caused by Orthopoxvirus Infection in a Dog. J. Small Anim. Pract. 1999, 40, 495–497. [CrossRef] [PubMed]
- Tryland, M.; Myrmel, H.; Holtet, L.; Haukenes, G.; Traavik, T. Clinical Cowpox Cases in Norway. Scand. J. Infect. Dis. 1998, 30, 301–303. [CrossRef] [PubMed]
- Martina, B.E.E.; Van Doornum, G.; Dorrestein, G.M.; Niesters, H.G.M.; Stittelaar, K.J.; Wolters, M.A.B.I.; Van Bolhuis, H.G.H.; Osterhaus, A.D.M.E. Cowpox Virus Transmission from Rats to Monkeys, the Netherlands. *Emerg. Infect. Dis.* 2006, 12, 1005. [CrossRef]
- 29. Prkno, A.; Hoffmann, D.; Goerigk, D.; Kaiser, M.; van Maanen, A.C.F.; Jeske, K.; Jenckel, M.; Pfaff, F.; Vahlenkamp, T.W.; Beer, M.; et al. Epidemiological Investigations of Four Cowpox Virus Outbreaks in Alpaca Herds, Germany. *Viruses* **2017**, *9*, 344. [CrossRef]
- 30. Willemse, A.; Egberink, H.F. Transmission of Cowpox Virus Infection from Domestic Cat to Man. Lancet 1985, 1, 1515. [CrossRef]
- Tryland, M.; Sandvik, T.; Hansen, H.; Haukenes, G.; Holtet, L.; Bennett, M.; Mehl, R.; Moens, U.; Olsvik; Traavik, T. Characteristics of Four Cowpox Virus Isolates from Norway and Sweden. APMIS 1998, 106, 623–635. [CrossRef]
- 32. Cronqvist, J.; Ekdahl, K.; Kjartansdottir, A.; Bauer, B.; Klinker, M. Cowpox—A Cat Disease in Man. *Lakartidningen* **1991**, *88*, 2605–2606.
- Hansen, H.; Okeke, M.I.; Nilssen, Ø.; Traavik, T. Comparison and Phylogenetic Analysis of Cowpox Viruses Isolated from Cats and Humans in Fennoscandia. Arch. Virol. 2009, 154, 1293–1302. [CrossRef]
- 34. Okeke, M.I.; Hansen, H.; Traavik, T. A Naturally Occurring Cowpox Virus with an Ectromelia Virus A-Type Inclusion Protein Gene Displays Atypical A-Type Inclusions. *Infect. Genet. Evol.* **2012**, *12*, 160–168. [CrossRef]
- Okeke, M.I.; Okoli, A.S.; Nilssen, Ø.; Moens, U.; Tryland, M.; Bøhn, T.; Traavik, T. Molecular Characterization and Phylogenetics of Fennoscandian Cowpox Virus Isolates Based on the P4c and Atip Genes. *Virol. J.* 2014, 11, 119. [CrossRef]
- Carroll, D.S.; Emerson, G.L.; Li, Y.; Sammons, S.; Olson, V.; Frace, M.; Nakazawa, Y.; Czerny, C.P.; Tryland, M.; Kolodziejek, J.; et al. Chasing Jenner's Vaccine: Revisiting Cowpox Virus Classification. *PLoS ONE* 2011, 6, 4–9. [CrossRef]
- 37. Dabrowski, P.W.; Radonić, A.; Kurth, A.; Nitsche, A. Genome-Wide Comparison of Cowpox Viruses Reveals a New Clade Related to Variola Virus. *PLoS ONE* **2013**, *8*, e79953. [CrossRef] [PubMed]
- 38. Mauldin, M.R.; Antwerpen, M.; Emerson, G.L.; Li, Y.; Zoeller, G.; Carroll, D.S.; Meyer, H. Cowpox Virus: What's in a Name? *Viruses* 2017, 9, 101. [CrossRef]
- 39. Babkin, I.V.; Babkina, I.N.; Tikunova, N.V. An Update of Orthopoxvirus Molecular Evolution. Viruses 2022, 14, 388. [CrossRef]
- Diaz-Cánova, D.; Moens, U.L.; Brinkmann, A.; Nitsche, A.; Okeke, M.I. Genomic Sequencing and Analysis of a Novel Human Cowpox Virus With Mosaic Sequences From North America and Old World Orthopoxvirus. *Front. Microbiol.* 2022, 13, 868887. [CrossRef]
- 41. Franke, A.; Pfaff, F.; Jenckel, M.; Hoffmann, B.; Höper, D.; Antwerpen, M.; Meyer, H.; Beer, M.; Hoffmann, D. Classification of Cowpox Viruses into Several Distinct Clades and Identification of a Novel Lineage. *Viruses* **2017**, *9*, 142. [CrossRef] [PubMed]
- 42. Senkevich, T.G.; Yutin, N.; Wolf, Y.I.; Koonin, E.V.; Moss, B. Ancient Gene Capture and Recent Gene Loss Shape the Evolution of Orthopoxvirus-Host Interaction Genes. *mBio* 2021, 12, e01495-21. [CrossRef] [PubMed]
- 43. Gubser, C.; Hué, S.; Kellam, P.; Smith, G.L. Poxvirus Genomes: A Phylogenetic Analysis. J. Gen. Virol. 2004, 85, 105–117. [CrossRef] [PubMed]
- 44. Hendrickson, R.C.; Wang, C.; Hatcher, E.L.; Lefkowitz, E.J. Orthopoxvirus Genome Evolution: The Role of Gene Loss. *Viruses* **2010**, *2*, 1933–1967. [CrossRef] [PubMed]
- 45. Zehender, G.; Lai, A.; Veo, C.; Bergna, A.; Ciccozzi, M.; Galli, M. Bayesian Reconstruction of the Evolutionary History and Cross-Species Transition of Variola Virus and Orthopoxviruses. *J. Med. Virol.* **2018**, *90*, 1134–1141. [CrossRef]
- 46. Babkin, I.V.; Babkina, I.N. A Retrospective Study of the Orthopoxvirus Molecular Evolution. *Infect. Genet. Evol.* **2012**, *12*, 1597–1604. [CrossRef]
- 47. Babkin, I.V.; Shchelkunov, S.N. Molecular Evolution of Poxviruses. Russ. J. Genet. 2008, 44, 895–908. [CrossRef]

- 48. Babkin, I.V.; Shchelkunov, S.N. Time Scale of Poxvirus Evolution. Mol. Biol. 2006, 40, 16–19. [CrossRef]
- Babkin, I.V.; Babkina, I.N. Molecular Dating in the Evolution of Vertebrate Poxviruses. *Intervirology* 2011, 54, 253–260. [CrossRef]
   [PubMed]
- Bankevich, A.; Nurk, S.; Antipov, D.; Gurevich, A.A.; Dvorkin, M.; Kulikov, A.S.; Lesin, V.M.; Nikolenko, S.I.; Pham, S.; Prjibelski, A.D.; et al. SPAdes: A New Genome Assembly Algorithm and Its Applications to Single-Cell Sequencing. J. Comput. Biol. 2012, 19, 477. [CrossRef]
- 51. Tcherepanov, V.; Ehlers, A.; Upton, C. Genome Annotation Transfer Utility (GATU): Rapid Annotation of Viral Genomes Using a Closely Related Reference Genome. *BMC Genom.* **2006**, *7*, 150. [CrossRef]
- 52. Camacho, C.; Coulouris, G.; Avagyan, V.; Ma, N.; Papadopoulos, J.; Bealer, K.; Madden, T.L. BLAST+: Architecture and Applications. *BMC Bioinform.* 2009, *10*, 421. [CrossRef] [PubMed]
- 53. Ehlers, A.; Osborne, J.; Slack, S.; Roper, R.L.; Upton, C. Poxvirus Orthologous Clusters (POCs). *Bioinformatics* 2002, *18*, 1544–1545. [CrossRef] [PubMed]
- Katoh, K.; Standley, D.M. MAFFT Multiple Sequence Alignment Software Version 7: Improvements in Performance and Usability. Mol. Biol. Evol. 2013, 30, 772–780. [CrossRef]
- 55. Martin, D.P.; Murrell, B.; Golden, M.; Khoosal, A.; Muhire, B. RDP4: Detection and Analysis of Recombination Patterns in Virus Genomes. *Virus Evol.* **2015**, *1*, vev003. [CrossRef]
- 56. Martin, D.; Rybicki, E. RDP: Detection of Recombination amongst Aligned Sequences. Bioinformatics 2000, 16, 562–563. [CrossRef]
- 57. Padidam, M.; Sawyer, S.; Fauquet, C.M. Possible Emergence of New Geminiviruses by Frequent Recombination. *Virology* **1999**, 265, 218–225. [CrossRef]
- 58. Martin, D.P.; Posada, D.; Crandall, K.A.; Williamson, C. A Modified Bootscan Algorithm for Automated Identification of Recombinant Sequences and Recombination Breakpoints. *AIDS Res. Hum. Retrovir.* **2005**, *21*, 98–102. [CrossRef] [PubMed]
- 59. Smith, J.M. Analyzing the Mosaic Structure of Genes. J. Mol. Evol. 1992, 34, 126–129. [CrossRef]
- Posada, D.; Crandall, K.A. Evaluation of Methods for Detecting Recombination from DNA Sequences: Computer Simulations. Proc. Natl. Acad. Sci. USA 2001, 98, 13757–13762. [CrossRef] [PubMed]
- Gibbs, M.J.; Armstrong, J.S.; Gibbs, A.J. Sister-Scanning: A Monte Carlo Procedure for Assessing Signals in Recombinant Sequences. *Bioinformatics* 2000, 16, 573–582. [CrossRef] [PubMed]
- 62. Boni, M.F.; Posada, D.; Feldman, M.W. An Exact Nonparametric Method for Inferring Mosaic Structure in Sequence Triplets. *Genetics* 2007, 176, 1035–1047. [CrossRef] [PubMed]
- 63. Talavera, G.; Castresana, J. Improvement of Phylogenies after Removing Divergent and Ambiguously Aligned Blocks from Protein Sequence Alignments. *Syst. Biol.* 2007, *56*, 564–577. [CrossRef] [PubMed]
- 64. Minh, B.Q.; Schmidt, H.A.; Chernomor, O.; Schrempf, D.; Woodhams, M.D.; Von Haeseler, A.; Lanfear, R.; Teeling, E. IQ-TREE 2: New Models and Efficient Methods for Phylogenetic Inference in the Genomic Era. *Mol. Biol. Evol.* **2020**, *37*, 1530–1534. [CrossRef]
- 65. Darriba, D.; Posada, D.; Kozlov, A.M.; Stamatakis, A.; Morel, B.; Flouri, T. ModelTest-NG: A New and Scalable Tool for the Selection of DNA and Protein Evolutionary Models. *Mol. Biol. Evol.* **2020**, *37*, 294. [CrossRef] [PubMed]
- Stamatakis, A. RAxML Version 8: A Tool for Phylogenetic Analysis and Post-Analysis of Large Phylogenies. *Bioinformatics* 2014, 30, 1313. [CrossRef] [PubMed]
- 67. Stamatakis, A.; Hoover, P.; Rougemont, J. A Rapid Bootstrap Algorithm for the RAxML Web Servers. *Syst. Biol.* **2008**, *57*, 758–771. [CrossRef]
- Ronquist, F.; Teslenko, M.; Van Der Mark, P.; Ayres, D.L.; Darling, A.; Höhna, S.; Larget, B.; Liu, L.; Suchard, M.A.; Huelsenbeck, J.P. MrBayes 3.2: Efficient Bayesian Phylogenetic Inference and Model Choice Across a Large Model Space. *Syst. Biol.* 2012, *61*, 539–542. [CrossRef]
- 69. Fourment, M.; Gibbs, M.J. PATRISTIC: A Program for Calculating Patristic Distances and Graphically Comparing the Components of Genetic Change. *BMC Evol. Biol.* 2006, *6*, 1. [CrossRef] [PubMed]
- Tamura, K.; Stecher, G.; Kumar, S. MEGA11: Molecular Evolutionary Genetics Analysis Version 11. Mol. Biol. Evol. 2021, 38, 3022–3027. [CrossRef]
- 71. Suchard, M.A.; Lemey, P.; Baele, G.; Ayres, D.L.; Drummond, A.J.; Rambaut, A. Bayesian Phylogenetic and Phylodynamic Data Integration Using BEAST 1.10. *Virus Evol.* **2018**, *4*, vey016. [CrossRef] [PubMed]
- Rambaut, A.; Lam, T.T.; Carvalho, L.M.; Pybus, O.G. Exploring the Temporal Structure of Heterochronous Sequences Using TempEst (Formerly Path-O-Gen). *Virus Evol.* 2016, 2, vew007. [CrossRef]
- 73. Rambaut, A.; Drummond, A.J.; Xie, D.; Baele, G.; Suchard, M.A. Posterior Summarization in Bayesian Phylogenetics Using Tracer 1.7. Syst. Biol. 2018, 67, 901. [CrossRef]
- 74. Yu, G.; Smith, D.K.; Zhu, H.; Guan, Y.; Lam, T.T.Y. Ggtree: An r Package for Visualization and Annotation of Phylogenetic Trees with Their Covariates and Other Associated Data. *Methods Ecol. Evol.* **2017**, *8*, 28–36. [CrossRef]
- 75. Coulson, D.; Upton, C. Characterization of Indels in Poxvirus Genomes. Virus Genes 2011, 42, 171–177. [CrossRef]
- Qin, L.; Upton, C.; Hazes, B.; Evans, D.H. Genomic Analysis of the Vaccinia Virus Strain Variants Found in Dryvax Vaccine. J. Virol. 2011, 85, 13049. [CrossRef] [PubMed]
- Qin, L.; Favis, N.; Famulski, J.; Evans, D.H. Evolution of and Evolutionary Relationships between Extant Vaccinia Virus Strains. J. Virol. 2015, 89, 1809. [CrossRef] [PubMed]

- 78. Smithson, C.; Purdy, A.; Verster, A.J.; Upton, C. Prediction of Steps in the Evolution of Variola Virus Host Range. *PLoS ONE* **2014**, *9*, e91520. [CrossRef] [PubMed]
- 79. Smithson, C.; Meyer, H.; Gigante, C.M.; Gao, J.; Zhao, H.; Batra, D.; Damon, I.; Upton, C.; Li, Y. Two Novel Poxviruses with Unusual Genome Rearrangements: NY\_014 and Murmansk. *Virus Genes* **2017**, *53*, 883–897. [CrossRef]
- 80. Smithson, C.; Kampman, S.; Hetman, B.M.; Upton, C. Incongruencies in Vaccinia Virus Phylogenetic Trees. *Computation* **2014**, *2*, 182–198. [CrossRef]
- 81. Jeske, K.; Weber, S.; Pfaff, F.; Imholt, C.; Jacob, J.; Beer, M.; Ulrich, R.G.; Hoffmann, D. Molecular Detection and Characterization of the First Cowpox Virus Isolate Derived from a Bank Vole. *Viruses* **2019**, *11*, 1075. [CrossRef]
- 82. Becker, C.; Kurth, A.; Hessler, F.; Kramp, H.; Gokel, M.; Hoffmann, R.; Kuczka, A.; Nitsche, A. Cowpox Virus Infection in Pet Rat Owners: Not Always Immediately Recognized. *Dtsch. Ärzteblatt Int.* **2009**, *106*, 329. [CrossRef]
- 83. Shchelkunov, S.N.; Safronov, P.F.; Totmenin, A.V.; Petrov, N.A.; Ryazankina, O.I.; Gutorov, V.V.; Kotwal, G.J. The Genomic Sequence Analysis of the Left and Right Species-Specific Terminal Region of a Cowpox Virus Strain Reveals Unique Sequences and a Cluster of Intact ORFs for Immunomodulatory and Host Range Proteins. *Virology* **1998**, *243*, 432–460. [CrossRef]
- Hendrickson, R.C.; Wang, C.; Hatcher, E.L.; Lefkowitz, E.J. Orthopoxvirus Genome Evolution: The Role of Gene Loss. *Viruses* 2010, 2, 1933. [CrossRef]

## Supplementary information



**Figure S1.** Presence of phylogenetic signal was evaluated by likelihood mapping checking for alternative topologies (tips), unresolved quartets (center) and partly resolved quartets (edges) for 87 OPXV whole genome (a), core genome (b), OPXV orthologous genes (c) and 62 conserved genes.



**Figure S2.** Phylogenetic and temporal signal analyses. (a) Presence of phylogenetic signal was evaluated by likelihood mapping checking for alternative topologies (tips), unresolved quartets (centre) and partly resolved quartets (edges) for 62 conserved genes of 55 CPXV strains. (b) Linear regression of root-to-tip genetic distance in a maximum likelihood phylogeny against sampling time for 62 conserved genes of 55 CPXV strains.

V Herman AKPV_2015				
AKPV_2015				
/ VD21				
CPXV Ger2012 Alpaca AK	PV 2015	CPXV Ger2017 Vole		AKMV Vani 2010
Unknown VACV_Liste	r VACV_Cop CPXV_Ger91	CPXV_NorwayFeline -	CPXV_Ger1998_2	CPXV_Ger2014_Human CPXV_Ger2002_MKY
CPXV_Ger2015_Cat1	CPXV_Ger2010_Raccon	known CPXV_HumLan08_1	CPXV_Fin2000_Man	CPXV_No_F2 (reversed) -
V SLE68				
Unknown AK CPXV_Ger2015_Cat1 VACV_Liste	PV 2015 VACV_Cop CPXV_Ger91	CPXV_NorwayFeline - CPXV_Ger2017_Vole	CPXV_Ger1998_2	CPXV_Ger2014_Human Unknown
CPXV_Ger2012_Alpaca	CPXV_Ger2010_Racoon Uni	known CPXV_HumLan08_1	CPXV_Fin2000_Man	CPXV_No_F2 (reversed) -
/ Garcia_1966				AKWV_Valii_2010
CPXV_Ger2015_Cat Unknown AK	PV 2015 Unknown Unknown Unknown Unknown	known CPXV_NorwayFeline -	CPXV_Ger1998_2	CPXV_Ger2002_MKY CPXV_Ger2014_Human
VACV_Liste	r VACV_Cop CPXV_Ger91	CPXV_Ger2017_Vole	CPXV_Fin2000_Man	Unknown CPXV_No_F2_(reversed) -
		Unknown		AKMV_Vani_2010
JPN46_yam	PV 2015 CPXV Ger2010 Record	Known CPXV. NorwayEeline -	CPXV Ger1998 2	Linknown
CPXV_Ger2012_Alpaca	Unknown	CPXV_HumLan08_1 CPXV Ger2017 Vole	CPXV_Fin2000_Man	CPXV_Ger2002_MKY
_		Unknown		CPXV_No_F2_(reversed) -
BGD75 Banu				AKMV_Vani_2010
CPXV_Ger2015_Cat Unknown AK	PV 2015 CPXV_Ger2010_Racoon Uni	known CPXV_HumLan08_1 CPXV_Ger2017_Vole	CPXV_Fin2000_Man	CPXV_Ger2002_MKY CPXV_Ger2014_Human
VACV_Liste	r VACV_Cop CPXV_Ger91	CPXV_NorwayFeline -	CPXV_Ger1998_2	Unknown CPXV No F2 (reversed) -
				Unknown AKMV_Vani_2010
Lister				
CPAV_FI&Amiens_2016 - VA	14 Cat1 CPXV_Electric/_1 Unknown CPXV_HumBer07_1 CPXV_Ge	er2012_Alpaca	Unknown Unknown	Unknown Unknown ECTV Nav
Unknown Duke		Unknown		Unknown
CPXV_FraAmiens_2016 -	CPXV_EleGri07_1	Unknown	Unknown	Unknown VARV_Garcia_1966
Unknown CPXV_Ger2012 Almosts CPXV_Ger2012 Almosts	2015_Human2 CPXV_Ger91 14_Cat1 Unknown CPXV_Ger2010_D		CPXV GerlMvrCk020_17	Unknown
CVA			- GFAV_GermygExs3d_17	Unknown
Unknown Unknown CPXV Ger20	Unknown CPXV_HumBer07_1 CPXV_Ge 14_Cat1 CPXV_EleGri07_1 CPX	er2012_Alpaca (V_Ger2010_Racoon	CPX	V_Ger2015_Cat2 Unknown ECTV_Nav
CPXV_FraAmiens_2016 -	CPXV_Ger91	Unknown	Unknown Unknown	VARV_Garcia_1966
CPXV_Ger2012_Alpaca Jtr				Unknown
Unknown VA	RV_VD21 CPXV_HumBer07_1	Unknown	CPX	/_Ger2013_Alpaca VARV_Garcia_1966
CPXV_FraAmiens_2016 - Unknown	Unknown CPXV_EleGri07_1	er2012_Alpaca	Unknown CPXV GerMygEk938 17	ECTV_Nav Unknown
Cop				
Unknown Unknown Unknown CPXV_FraAmiens_2016 -	CPXV_EleGri07_1 Unknown CPXV_HumBer07_1		CPXV_GerMygEk938_1	V_Ger2015_Cat2 VARV_Garcia_1966
Unknown MNR76	ri4_Cati	CPXV_Ger2014_Cat2	Onknown	Unknown
Unknown CPXV_Ge	r2012_AlpacaCPXV_EleGri07_1			Unknown
Unknown VA	RV_VD21	Unknown	CPXV_GerMygEk938_17	ECTV Nav
CRXV Gor2012 Alegon	CMLV CMS			Oliviowi
Gri			Unknown	Unknown
Gri Unknown Unknown	Unknown	Unknown	Unknown CPXV_Ger2010_MKY	Unknown VARV_Garcia_1966
Gr Gr Unknown Duknown	Unknown	Unknown	CPXV_Ger2010_MKY	Unknown Unknown ECTV_Nav Linknown Alpaca
Of Chicown     Unknown     Unknown     Unknown     Unknown     Inzoog Man	Unknown	Unknown	Unknown CPXV_Ger2010_MKY CPXV_Ger2012	Unknown VARV Garcia_1966 ECTV_Nav Unknown UARvon
Control Contro Control Control Control Control Control Control Control Control Co	Unknown	Unknown	Unknown CPXV_Ger2010_MKY CPXV_Ger2010_MKY	Unknown Unknown ECTV_Nev LCTV_Nev LCTV_Nev Unknown ECTV_Nev Unknown
Control of the second sec	Unknown CPXV_Ger91 Unknown CPXV_Ger91	Unknown	Unknown CPXV_Ger2010_MKY CPXV_Ger2012 CPXV_Ger2010_MKY	Unknown Unknown ECTV_New Unknown Apaca ECTV_New Unknown ECTV_New Unknown ECTV_New Unknown Unknown Unknown
Chindown Unknown Unknown Unknown Unknown CPXV FraAmiens 2016- Unknown	Unknown CPXV_Ger91 Unknown CPXV_Ger91 Unknown CPXV_Ger91	Unknown	Unknown CPXV_Ger2010_MKY CPXV_Ger2012 CPXV_Ger2010_MKY	Unknown Unknown ECTV_New Unknown Unknown ECTV_New Unknown ECTV_New Unknown Unknown ECTV_New Unknown Unknown Unknown Unknown
CPXV_Ger2012_Apaca  CPXV_Ger2012_Apaca  CPXV_Ger2012_Apaca  CPXV_Ger2012_Apaca  CPXV_Ger2012_Apaca  CPXV_Ger2012_Apaca  CPXV_Ger2012_Apaca	Unknown Unknown Unknown Unknown CPXV_Ger91 Unknown CPXV_Ger91 Unknown CPXV_Ger91 Unknown CPXV_Ger91 Unknown	Unknown	Unknown CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_NorwayFeline - CMLV_MK	Unknown Unknow
Ar	Unknown Unknown Unknown Unknown CPXV_Ger91 Unknown CPXV_Ger91 Unknown CPXV_Ger91 Unknown CPXV_Ger91 Unknown Unknown Unknown Unknown	Unknown	Unknown CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_NorwayFeline - CMLV_MS	Unknown Unknown ECTV_New Duknown Unknown
Arrown	Unknown Unknown Unknown Unknown Unknown Of 5 Humar2 Unknown Of CPXV_EleGn07_1 Unknown CPXV_Ger91 Unknown CPXV_Ger91 Unknown CPXV_Ger91 Unknown	Down Unknown Urknown	CPXV_Ger2010_MKY	Unknown CPXV_Ger2010_Alpar 6 CPXV_Ger2010_Alpar 6 CPXV_HumLan08_1 CPXV_HumLan08_1
Arrown	Unknown     Unknown     Unknown     Unknown     Unknown     CPXV_EGer91     Unknown     CPXV_Ger91     Unknown     CPXV_Ger91     Unknown     CPXV_Ser91     Unknown     Ser91     Se	Down CPLDuke 0_Reccon	Unknown CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_NorwayFeline CPXV_Ori CPXV_Ori CPXV_Ger2014_Cat1	Orknown     Unknown     CPXV_Election7_1     Unknown     Unknown     CPXV_Ger2010_Alpan
CPXV_SetSUP_SetSuperative Unknown Unknown Unknown Unknown Unknown CPXV_FraAmiens 2016 CPXV_Car2012_Algaca Unknown Unknown CPXV_FraAmiens_2016 CPXV_SetSuperative CPXV_FraAmiens_2016 CPXV_SetSuperative CPXV_FraAmiens_2016 CPXV_Lister CPXV_HumGra07_1 CPXV_HumLi08_1	Unknown     Unknown     Unknown     Unknown     Unknown     Unknown     Unknown     OPXV_EHGn07_1     OPXV_Ger91     Unknown     OPXV_N_H2     OPXV_Ger91     Unknown     OPXV_SEGn07_1     VA     CPXV_Ger91     CPXV_Ger91     CPXV_Ger91     CPXV_Ger91	Down Down Unknown Unknown CP.Duke CP.XV_Fm2001_Nancy	Unknown CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_NorwayFeline CPXV_Ori CPXV_Ori CPXV_Ger2014_Cat1	Chinown Unknown CPXV_Edic(7, 1 Unknown CPXV_Ger(2010, Alpar CPXV_HumLan08, 1 CPXV_Arty_IPN46_yam CPXV_Grid DPXV_Grid
Ar Ar _ Set Du _ pagea     Ar Ar _ Set Du Annown     Unknown     Unknown     Unknown     Unknown     Drawonn     CPXV_FraAmiens 2016-     CPXV_Gar2012_Alpaca     Unknown     CPXV_Gar2012_Alpaca     Unknown     CPXV_FraAmiens 2016     CPXV_Gar2012_Alpaca     CPXV_FraAmiens 2016     CPXV_Gar2012_Alpaca     CPXV_FraAmiens 2016     CPXV_FraAmiens 2016     CPXV_FraAmiens 2016     CPXV_LungGar21     CPXV_LungGar21     CPXV_LungGar21     CPXV_LungGar21	Unknown Unknown Unknown Unknown Unknown Unknown UNS_Humar2 OPXV_EleGr07_1 Unknown CPXV_EleGr07_1 Unknown CPXV_EleGr07_1 Unknown CPXV_Ger201 CPXV_Ger201 CPXV_Ger201 CPXV_Ger201 CPXV_Ger201 CPXV_Ger202 MrY CPXV_Ger202 CPXV_Ger201 CPXV_Ger202 CPXV_Ger20 CPXV_Ger202 CPXV_Ger20 CPXV	Down Unknown Unknown CY_Date CPXV_Fra2001_Nancy	Unknown  CPXV_Ger2010_MKY  CPXV_Ger2010_MKY  CPXV_Ger2010_MKY  CPXV_Ger2010_MKY  CPXV_NorwayFeline  CPXV_Coil  CPXV_Gor2014_Cat1	CPXV_Rev_Date CPXV_Set CPXV_S
CPXV_FraAmiens_2016     CPXV_FraAmiens_2016     CPXV_Ger2012_Apaca     CPXV_Ger2014_Apaca     CPXV_Ger2014_Ap	Unknown Unknown Unknown Unknown Unknown Unknown US _ Humar2 U _ CPXV_EkGr07_1 Unknown CPXV_EkGr07_1 VA	Unknown Down Urknown Urknown Urknown Urknown Urknown Urknown Urknown Urknown Urknown Urknown Urknown Urknown Urknown Urknown Urknown	Unknown CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2014_Cat1 CPXV_Gri	CPXV_No_F2_(newred)- CPXV_NO_F2_(newred)- CPXV_NO_F2_(newred)-
CPXV_Ger2012_Apaca     CPXV_FraAmiens_2016     CPXV_Ger2012_Apaca     Unknown     CPXV_Ger2012_Apaca     Unknown     CPXV_Ger2012_Apaca     CPXV_Ger2014_Ger2014     CPXV_Ger2014     CPXV_Ger2014_Ger2014     CPXV_Ger2014	Unknown Unknown Unknown Of 5 Humar2 Of 5 Humar2 Of 6 PAV_ENGR07_1 Unknown CPXV_Ger31 Unknown Of 5 Humar2 CPXV_ENGR07_1 CPXV_Ger31 Unknown CPXV_Ger31 Unknown CPXV_Ger31 Unknown CPXV_Ger31 Unknown CPXV_Ger31 Unknown CPXV_Ger31 Unknown CPXV_Ger31 Unknown CPXV_Ger31 Unknown CPXV_Ger31 Unknown	Unknown  Inown Urknown Urknown  CV_Date CPXV_Fra2001_Nancy  CV_Date CPXV_Fra2001_Nancy  CV_Date CPXV_Ger2017_Vole	Unknown CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2014_Cat1	CPXV, No. F2, (reversed)- CPXV, No. F3, (re
Art _ SetLor _ S	Unknown Unknown Unknown Of S-Humar2 OFXV_Ger91 Unknown OFXV_Ger91 OFXV_GF71	Unknown Unknown Unknown Urknown	Unknown CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_CPXV_Ger2014_Cat1	CPXV, No. F2, (reversed) CPXV, PAC 2010, Alpac CPXV, Sec 2010, Al
Ar	Unknown Unknown Unknown Of S, Humar2 OPXV_EeGr07_1 Unknown CPXV_Ger91 Unknown OPXV_EeGr07_1 CPXV_Ger91 Unknown CPXV_Ger91 CPXV_GFYV_FFYV CPXV_GFYV_FFYV CPXV_GFYV_FYV CPXV_GFYV CPXV_GFYV_FYV CPXV_FYV CPXV_FYV CPXV_FYV CPXV_FYV CPXV_FYV CPXV CPXV_FYV CPXV_FYV CPXV_FYV CPXV_FYV CPXV_FY	Date CY_Date CY_Date CY_Date CPXV_Fra2001_Nancy CY_Date CPXV_Fra2001_Nancy CY_Date CPXV_Fra2001_Nancy CY_Date CPXV_Fra2001_Nancy	Unknown CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_NorwayFeline - CPXV_Gri CPXV_Ger2014_Cat1	Unknown Unknow
CPXV_Ger2012_opeal Unknown Unknown CPXV_FraAmiens_2016- CPXV_Ger2012_Apaca CPXV_Ger2012_Apaca CPXV_Ger2012_Apaca CPXV_Ger2012_Apaca CPXV_Ger2012_Apaca CPXV_Ger2012_Apaca CPXV_Ger2012_Apaca CPXV_Ger2012_Apaca CPXV_Ger2012_Apaca CPXV_Ger2012_Victor	Unknown Unknown Unknown Unknown Unknown Unknown OPXV_EleGr07_1 Unknown CPXV_Ger91 Unknown OPXV_EleGr07_1 Unknown CPXV_Ger91 CPXV_Ger91 CPXV_GFPXV_GFPXV_GFPXV CPXV_GFPXV_GFPXV CPXV_GFPXV_GFPXV CPXV	Data CYL Date CPXV_Fra2001_Nancy CV_Date CPXV_Fra2001_Nancy CV_Date CPXV_Fra2001_Nancy CV_Date CPXV_Fra2001_Nancy CV_Date CPXV_Fra2001_Nancy	Unknown CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2014_Cat1	Unknown Unknow
Virtual Control of Co	Unknown Unknown Unknown Unknown Unknown Unknown OPXV_Ger91 CPXV_Ger91 Unknown OPXV_EkGr07_1 Unknown CPXV_Ger91 Unknown OPXV_EkGr07_1 CPXV_Ger91 Unknown CPXV_Ger91 CPXV_GFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF	Unknown Unknow	Unknown CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2014_Cat1 CPXV_Ger2014_Cat1	Chinom Unknown Unknow
Original Construction         Original Construction           Unknown         Unknown           Unknown         Unknown           Original Construction         2016           Original Construction         Unknown           Unknown         CPXV, Janae           CPXV_Ama 2015         CPXV, Janae 2015           VX_HumGrafor_1         CPXV, Janae 2015           VX_V_HumGrafor_1         CPXV, Janae 2015           CPXV_V, Amae 2015         VACV_Lister           VX, HumGrafor_1         CPXV, Janae 2015           CPXV_Manae 2015         CPXV, Janae 2015           CPXW_HumGrafor_1         CPXV, Janae 2015           CPXW_HumGrafor_1         CPXV, Janae 2015 <td>Unknown Unknown Unknown Unknown Unknown Unknown CPXV_Ger91 CPXV_Ger91 Unknown CPXV_Ger91 CPX</td> <td>Unknown  Pown Unknown  CV_Duke CPXV_Ger2017_Vole  CPXV_Ger2017_Vole  CPXV_Fra2001_Nancy  CV_Duke CPXV_Ger2017_Vole  CPXV_Ger2017_Vole  CPXV_Ger2017_Vole  CPXV_Ger2017_Vole  CPXV_Fra2001_Nancy  CV_Duke CPXV_Fra2001_Nancy CV_Duke CV_Duke CPXV_Fra2001_Nancy CV_DUke C</td> <td>Unknown CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2014_Cat1 CPXV_Ger2014_Cat1</td> <td>CHANNER Unknown Unknown Unknown LECTV_Nex Unknown U</td>	Unknown Unknown Unknown Unknown Unknown Unknown CPXV_Ger91 CPXV_Ger91 Unknown CPXV_Ger91 CPX	Unknown  Pown Unknown  CV_Duke CPXV_Ger2017_Vole  CPXV_Ger2017_Vole  CPXV_Fra2001_Nancy  CV_Duke CPXV_Ger2017_Vole  CPXV_Ger2017_Vole  CPXV_Ger2017_Vole  CPXV_Ger2017_Vole  CPXV_Fra2001_Nancy  CV_Duke CPXV_Fra2001_Nancy CV_Duke CV_Duke CPXV_Fra2001_Nancy CV_DUke C	Unknown CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2014_Cat1 CPXV_Ger2014_Cat1	CHANNER Unknown Unknown Unknown LECTV_Nex Unknown U
Originary Crysteller     Originary Crysteller     Unknown	Unknown Unknown Unknown Unknown Unknown Unknown CPXV_Ger91 CPXV_Ger91 Unknown CPXV_Ger91 Unknown CPXV_Ger91 Unknown CPXV_Ger91 Unknown CPXV_Ger91 Unknown CPXV_Ger91 Unknown CPXV_Ger91 Unknown CPXV_Ger91 Unknown CPXV_Ger91 Unknown CPXV_Ger91 Unknown CPXV_Ger91 Unknown CPXV_Ger91 Unknown CPXV_Ger91 Unknown CPXV_Ger91 Unknown CPXV_Ger91 Unknown CPXV_Ger91 Unknown CPXV_Ger91 Unknown CPXV_Ger91 Unknown CPXV_Ger91 CPXV_G	Date CV_Date CV_Date CV_Date CPXV_Fra201_Nancy CV_Date CPXV_Fra201_Nancy CV_Date CPXV_Fra201_Nancy CV_Date CPXV_Fra201_Nancy CV_Date CPXV_Fra201_Nancy CV_Date CPXV_Fra201_Nancy CV_Date CPXV_Fra201_Nancy CV_Date CPXV_Fra201_Nancy CV_Date CPXV_Fra201_Nancy	Unknown CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2014_Gat1 CPXV_Ger2014_Gat1 CPXV_Ger2014_Gat1 CPXV_Ger2014_Gat1	CHALL DATE Unknown
Original Constraints of the second seco	Unknown Unknown Unknown Unknown Unknown CPXV_EeGen07_1 CPXV_Ger31 Unknown CPXV_EeGen07_1 CPXV_Ger31 CPXV_EeGen07_1 CPXV_Ger30 CPXV_GF30	Unknown  Duko Unknown  CV_Duke CPXV_Ger2017_Vole  CV_Duke CPXV_Ger2017_Vole CPXV_Fra2001_Nancy  CV_Duke CPXV_Fra2001_Nancy  CV_Duke CPXV_Fra2001_Nancy  CV_Duke CPXV_Ger2017_Vole CPXV_Ger2017_V	Unknown CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_GR CPX	CHANGENER Unknown Unknown ECTV_New Unknown Unknown Unknown Unknown Unknown Unknown Unknown Unknown Unknown Unknown Unknown Unknown CPXV_E66/07_1 Unknown Unknown Unknown CPXV_Ger2010_2 CPXV_Ger2010_2 Unknown CPXV_Ger2010_2 Unknown CPXV_Ger2015_Cat2 CPXV_Gri UNAVY_PH46_yam CPXV_Gri DPXV_Gri DPXV_Gri CPXV_Ger2015_Cat2 CPXV_Gri DPXV_Gri DPXV_Ger2015_Cat2 CPXV_Gri D
CPXV_Ama_2015     CPXV_Lister     XV_HumGad07_1     CPXV_Lister     XV_LUCU_Lister     XV_LUCU_LISte	Unknown Unknown Unknown Unknown Unknown Unknown CPXV_Ger91	Date CV_Date 0_Recoon CV_Date 0_Recoon CV_Date 0_Recoon CV_Date 0_Recoon CV_Date 0_Recoon CV_Date 0_Recoon CPXV_Fra201_Nancy CV_Date 0_Recoon CPXV_Fra201_Nancy CV_Date 0_Recoon CPXV_Fra201_Nancy CV_Date 0_Recoon CPXV_Fra201_Nancy CV_Date 0_Recoon CPXV_Fra201_Nancy CV_Date 0_Recoon CPXV_Fra201_Nancy	Unknown CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2014_Gat1 CPXV_Ger2014_Gat1 CPXV_Ger2014_Gat1	CHANNERS CONTRACT CONTRACT OF
Original Construction         Original Construction           Original Construction         Original Construction <tr< td=""><td>Unknown Unknown Unknown Unknown Unknown Unknown Unknown CPXV_Ger91 CPX</td><td>Down         Unknown           CV_Date 0_Raccon         CPXV_Ger2017_Vole           0_CPXV_Fra2001_Nancy         CPXV_Fra2001_Nancy           CV_Date 0_Raccon         CPXV_Ger2017_Vole           CV_Date 0_Raccon         CPXV_Ger2017_Vole           CV_Date 0_Raccon         CPXV_Ger2017_Vole           CV_Date 0_Raccon         CPXV_Ger2017_Vole           CV_Date 0_Raccon         CPXV_Ger2017_Vole           CPXV_Ger2017_Vole         CPXV_Fra2001_Nancy           CPV_Ger2017_Vole         CPXV_Ger2017_None           0_Raccon         CPXV_Ger2017_Vole           0_Raccon         CPXV_Ger2017_Vole</td><td>Unknown  CPXV_Ger2010_MKY  CPXV_Ger2010_MKY  CPXV_Ger2010_MKY  CPXV_Ger2010_MKY  CPXV_Ger2010_MKY  CPXV_Ger2014_Cat1  CPXV_Ger2</td><td>Chinown Unknown Unknow</td></tr<>	Unknown Unknown Unknown Unknown Unknown Unknown Unknown CPXV_Ger91 CPX	Down         Unknown           CV_Date 0_Raccon         CPXV_Ger2017_Vole           0_CPXV_Fra2001_Nancy         CPXV_Fra2001_Nancy           CV_Date 0_Raccon         CPXV_Ger2017_Vole           CV_Date 0_Raccon         CPXV_Ger2017_Vole           CV_Date 0_Raccon         CPXV_Ger2017_Vole           CV_Date 0_Raccon         CPXV_Ger2017_Vole           CV_Date 0_Raccon         CPXV_Ger2017_Vole           CPXV_Ger2017_Vole         CPXV_Fra2001_Nancy           CPV_Ger2017_Vole         CPXV_Ger2017_None           0_Raccon         CPXV_Ger2017_Vole           0_Raccon         CPXV_Ger2017_Vole	Unknown  CPXV_Ger2010_MKY  CPXV_Ger2010_MKY  CPXV_Ger2010_MKY  CPXV_Ger2010_MKY  CPXV_Ger2010_MKY  CPXV_Ger2014_Cat1  CPXV_Ger2	Chinown Unknown Unknow
Or A	Unknown Unknown Unknown Unknown Unknown Unknown Unknown Unknown UPXV_EHGn07_1 Unknown CPXV_Ger31 Unknown CPX	Dram         Unknown           CV_Duke         CPXV_Ger2017_Vole           0_Raccon         CPXV_Fra2001_Nancy           CV_Duke         CPXV_Ger2017_Vole           0_Raccon         CPXV_Ger2017_Vole           0_Raccon         CPXV_Ger2017_Vole           0_Raccon         CPXV_Ger2017_Vole           0_Raccon         CPXV_Fra2001_Nancy           CV_Duke         CPXV_Fra201_Nancy           CV_Duke         CPXV_Fra201_Nancy           CP_RV_Ger2017_Vole         CPXV_Fra2001_Nancy           CV_Duke         CPXV_Fra2001_Nancy	CPXV_Ger2010_MKY	Chinown Unknown Unknown Unknown Unknown Apaca Unknown Unknown Unknown Unknown Unknown ECTV New VACV, Carbin, 1966 ECTV, New CRV, Cerdollo, Apar ECTV, Cerdollo, ECTV, ECTV, ECTV, ECT
Or Arguere of Landown         Orknown         Orknown           Orknown         Unknown         Orknown           Status         Orknown         Orknown           CPXV, Ger2012, Alpaca         CPXV_Ger2012, Alpaca         CPXV_Ger2012, Alpaca           Status         CPXV, Ger2012, Alpaca         CPXV_Ger2012, Alpaca           CPXV, Ger2012, Alpaca         CPXV_Ger2012, Alpaca         CPXV_Ger2012, Alpaca           CPXV, Ger2012, Alpaca         CPXV_HumLi08, 1         Status           CPXV, Jana 2015         VACV_Lister         VX/HumCa08, 1           Status         CPXV_Ana 2015         VACV_Lister           SVX, HumGra07, 1         CPXV_HumLi08, 1         Status           CPXV_Ana 2015         VACV_Lister         VXCV_Lister           SVX, HumGra07, 1         CPXV_HumLi08, 1         Status           CPXV_Ger2015         Cett         Cett           CPXV_Ger2015         Cett         Macon	Unknown Unknow	Date         Unknown           0.00m         Urknown           CV_Date         CPXV_Ger2017_Vole           0_Raccon         CPXV_Fra2001_Nancy           CV_Date         CPXV_Ger2017_Vole           0_Raccon         CPXV_Fra2001_Nancy           CV_Date         CPXV_Ger2017_Vole           0_Raccon         CPXV_Ger2017_Vole           0_Raccon         CPXV_Ger2017_Vole           0_Raccon         CPXV_Ger2017_Vole           0_Raccon         CPXV_Ger2017_Vole           CPXV_Ger2017_Vole         CPXV_Ger2017_Vole           CPXV_Ger2017_Vole         CPXV_Ger2017_Vole           CPXV_Ger2017_Vole         CPXV_Ger2017_Vole           CPXV_Ger2017_Vole         CPXV_Ger2017_Vole	Unknown CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2014_Gat1 CPXV_Ger2014_Gat1 CPXV_Ger2014_Gat1 CPXV_Ger2014_Gat1 CPXV_Ger2014_Gat1 CPXV_Ger2014_Gat1 CPXV_Ger2014_Gat1 CPXV_Ger2014_Gat1	Chinown Unknown Unknown Unknown Apaca I Chinown Unknown I Chinown
Original Construction         Original Construction           Original Construction         Original Construction <tr< td=""><td>Unknown Unknown Unknown Unknown Unknown Unknown Unknown US_Humar2 OPXV_EleGn07_1 CPXV_Ger91 Unknown CPXV_EleGn07_1 CPXV_Ger91 CPXV_Ger202 MKY CPXV_Ger20 MKY CPXV_Ger20 MKY CPXV_Ger20 MKY CPX</td><td>Date         Unknown           00m         Unknown           CV_Date         CPXV_Fra2001_Nancy           0_Raccon         CPXV_Fra2001_Nancy           CV_Date         CPXV_Fra2001_Nancy           0_Raccon         CPXV_Fra2001_Nancy           CV_Date         CPXV_Fra2001_Nancy           0_Raccon         CPXV_Fra2001_Nancy           0_CPXV_Fra2001_Nancy         CPXV_Fra2001_Nancy           CV_Date         CPXV_Fra2001_Nancy           0_CPXV_Fra2001_Nancy         CPXV_Fra2001_Nancy           CV_Date         CPXV_Fra2001_Nancy           CV_Date         CPXV_Fra2001_Nancy           CV_Date         CPXV_Fra2001_Nancy           CV_Date         CPXV_Fra2001_Nancy</td><td>Unknown CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_NorwayFeline - CPXV_Ger2014_Cat1 CPXV_Ger2014_Cat1 CPXV_Ger2014_Cat1 CPXV_Ger2014_Cat1 CPXV_Ger2014_Cat1</td><td>CHV, Ger2010, 2 CPXV, Ger2014, Human CPXV, Ger2014, Human CPXV, Ger2014, Human</td></tr<>	Unknown Unknown Unknown Unknown Unknown Unknown Unknown US_Humar2 OPXV_EleGn07_1 CPXV_Ger91 Unknown CPXV_EleGn07_1 CPXV_Ger91 CPXV_Ger202 MKY CPXV_Ger20 MKY CPXV_Ger20 MKY CPXV_Ger20 MKY CPX	Date         Unknown           00m         Unknown           CV_Date         CPXV_Fra2001_Nancy           0_Raccon         CPXV_Fra2001_Nancy           CV_Date         CPXV_Fra2001_Nancy           0_Raccon         CPXV_Fra2001_Nancy           CV_Date         CPXV_Fra2001_Nancy           0_Raccon         CPXV_Fra2001_Nancy           0_CPXV_Fra2001_Nancy         CPXV_Fra2001_Nancy           CV_Date         CPXV_Fra2001_Nancy           0_CPXV_Fra2001_Nancy         CPXV_Fra2001_Nancy           CV_Date         CPXV_Fra2001_Nancy           CV_Date         CPXV_Fra2001_Nancy           CV_Date         CPXV_Fra2001_Nancy           CV_Date         CPXV_Fra2001_Nancy	Unknown CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_NorwayFeline - CPXV_Ger2014_Cat1 CPXV_Ger2014_Cat1 CPXV_Ger2014_Cat1 CPXV_Ger2014_Cat1 CPXV_Ger2014_Cat1	CHV, Ger2010, 2 CPXV, Ger2014, Human CPXV, Ger2014, Human CPXV, Ger2014, Human
Original Di Capitali Capitali di Indicom         Unincom           Unincom         Unincom           Unincom         Unincom           Original Di Capitali di Indicom         Unincom           Originali di Indicom         Originali di Indicom           Vicoluti di Indicom         Originali di Indicom           Originali di Indicom         Originali di Indicom           Originali di Indicom         Originali di Indicom           Vicoluti di Indicom         Originali di Indicom           Vicoluti di Indicom         Originali di Indicom	Unknown Unknown Unknown Unknown Unknown Unknown Unknown Unknown Unknown U S, Human2 CPXV_EeGn07_1 CPXV_Ger31 CPXV_	Date         Unknown           CV_Date         CPXV_Era2001_Nancy           0_Baccoon         CPXV_Era2001_Nancy           CV_Date         CPXV_Era2001_Nancy           0_Baccoon         CPXV_Era2001_Nancy           CV_Date         CPXV_Era2001_Nancy           0_Baccoon         CPXV_Era2001_Nancy           CV_Date         CPXV_Era2001_Nancy           0_Baccoon         CPXV_Era2001_Nancy           CV_Date         CPXV_Era2001_Nancy           CV_Date         CPXV_Era2001_Nancy           CV_Date         CPXV_Era2001_Nancy           CV_Date         CPXV_Era2001_Nancy           CV_Date         CPXV_Era2001_Nancy	Unknown CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2014_Cat1 CPXV_Ger2014_Cat1 CPXV_Ger2014_Cat1 CPXV_Ger2014_Cat1 CPXV_Ger2014_Cat1 CPXV_Ger2014_Cat1	CHANNERS Cardia 1966 I Chrinosom Unknown I Chrinosom I Chrinosom
Article and a second seco	Unknown Unknown Unknown Unknown Unknown Unknown Unknown Unknown CPXV_EeGr07_1 CPXV_Ger31 CPX	Date         Unknown           CV_Date         CPXV_Ger2017_Vole           0_Baccon         CPXV_Fra2001_Nancy           CV_Date         CPXV_Fra2001_Nancy           0_Date         CPXV_Fra2001_Nancy           CV_Date         CPXV_Fra2001_Nancy           0_Date         CPXV_Fra2001_Nancy           CV_Date         CPXV_Fra2001_Nancy	Unknown CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2014_Cat1 CPXV_GF204_CAT1 CPXV_GF204_CAT1 CPXV_GF204_CA	CHAV Ge2010, Car CPXV, Ge2010,
Ar _ Set Diversion Unknown     Unknown     Unknown     Unknown     Unknown     Unknown     CPXV_FraAmiens_2016 -     Unknown     Unknown     CPXV_Ger2012_Alpaca     CPXV_Ger2014     CPXV_Ger2	Unknown Unknown Unknown Unknown Unknown Unknown Unknown Unknown CPXV_EleGn07_1 CPXV_Ger31 CP	Date         Urknown           CV_Date         CPXV_Ger2017_Vole           0_Baccon         CPXV_Fra2001_Nancy           CV_Date         CPXV_Fra2001_Nancy           0_Baccon         CPXV_Fra2001_Nancy           CV_Date         CPXV_Fra2001_Nancy           0_Baccon         CPXV_Fra2001_Nancy           CV_Date         CPXV_Fra2001_Nancy           0_Baccon         CPXV_Fra2001_Nancy           CV_Date         CPXV_Fra2001_Nancy           0_Datecon         CPXV_Fra2001_Nancy           CV_Date         CPXV_Fra2001_Nancy           0_Datecon         CPXV_Fra2001_Nancy           CV_Date         CPXV_Fra2001_Nancy           CV_Date         CPXV_Fra2001_Nancy           CV_Date         CPXV_Ger2017_Vole           0_Baccon         CPXV_Ger2017_Vole           CV_Date         Utknown	Unknown CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_GCH CPXV_Ger2014_GCH CPXV_FINION0_FINI	CHAV Get2016, Car CPXV, Get2010, Algan CPXV, Car CPXV, Car CPX
A CPX/_SetUP_openal CPX/_FraAmiens_2016- CPX/_FraAmiens_2016- CPX/_Get2012_Apaca CPX/_Get2012_Apaca CPX/_Get2012_Apaca CPX/_Get2012_Apaca CPX/_Get2012_Apaca CPX/_Get2012_Apaca CPX/_Get2012_Apaca CPX/_Get2012_Apaca CPX/_Get2012_Apaca CPX/_Later PX/_HumGra07_1 CPX/_Later PX/_HumGra07_1 CPX/_Ama_2015 CPX/_Ama_2015 CPX/_Later PX/_HumGra07_1 CPX/_Later PX/_HumGra07_1 CPX/_Later PX/_HumGra07_1 CPX/_Later PX/_HumGra07_1 CPX/_Later PX/_HumGra07_1 CPX/_Later PX/_HumGra07_1 CPX/_Later PX/_HumGra07_1 CPX/_Later PX/_HumGra07_1 CPX/_Later PX/_HumGra07_1 CPX/_Later PX/_HumGra07_1 CPX/_Cet2015_Cet1 CPX/_Ama_2015 CPX/_Later PX/_HumGra07_1 CPX/_Later PX/_HumGra07_1 CPX/_Get2015_Cet	Unknown Unknow	Date         Utknown           CV_Date         CPXV_Ger2017_Vole           0_BROCON         CPXV_Ger2017_Vole           0_RACCON         CPXV_Ger2017_Vole	Unknown CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2014_Cat1 CPXV_FINIC200_Man	CPVV, Vac P2, (reversed) -     CPVV, Ger2019, Car2     CPVV, Ger2014, Human     CPVV, Ger2014, Huma
OKAL_SELECT_PERSON         OKINDANI           OKAL_SELECT_PERSON         OKINDANI           OKALSEN         OKINDANI           Definition         Unknown           Unknown         Unknown           OKALSEN         OKINDANI           Down         CPXV_FraAmeen 2016 -           CPXV_Car0012_Abaca         CPXV_Gen           CPXV_FraAmeen 2016         CPXV_Gen           CPXV_FraAmeen 2016         CPXV_Gen           CPXV_FraAmeen 2016         CPXV_Gen           CPXV_FraAmeen 2016         CPXV_Gen           CPXV_FraAmeen 2015         CPXV_Leter           PXV_HumCra07_1         CPXV_HumLi08_1           HumLade 1         VACV_Lister           PXV_HumCra07_1         CPXV_HumLi08_1           CPXV_Ama_2015         VACV_Lister           PXV_HumCra07_1         CPXV_HumLi08_1           CPXV_Ama_2015         VACV_Lister           PXV_HumCra07_1         CPXV_HumLi08_1           CPXV_Gen2015         Cett           CPXV_Gen2015         Cett           CPXV_Gen2015         Cett           CPXV_Gen2015         Cett           CPXV_Gen2015         Cett           CPXV_Gen2015         Cett           CPXV_Gen2015	Unknown Unknown Unknown Unknown Unknown Unknown CPXV_EleGn07_1 CPXV_Ger31 CPX	Date CPXV_Fra201_Nancy CV_Date 0_Raccon CPXV_Fra201_Nancy CV_Date 0_Raccon CPXV_Fra201_Nancy CV_Date 0_Raccon CPXV_Fra201_Nancy CV_Date 0_Raccon CPXV_Fra201_Nancy CV_Date 0_Raccon CPXV_Fra201_Nancy CV_Date 0_Raccon CPXV_Fra201_Nancy CV_Date 0_Raccon CPXV_Fra201_Nancy CV_Date 0_Raccon CPXV_Fra201_Nancy CV_Date 0_Raccon CPXV_Fra201_Nancy CV_Date 0_Raccon CPXV_Fra201_Nancy CV_Date 0_Raccon CPXV_Fra201_Nancy CV_Date 0_Raccon CPXV_Fra201_Nancy CV_Date 0_Raccon CPXV_Fra201_Nancy CV_Date 0_Raccon CPXV_Fra201_Nancy	Unknown CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2010_MKY CPXV_Ger2014_Cat1 CPXV_FINITANAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	CPXV, Ger2010, Lipson CPXV, Ger2014, Human CPXV, Ger2014, Human

CPXV_JagKre08_2				
CPXV_Ger2015_Cat1 VACV_Cop CPXV_Ger2015_Cat1 CPXV_Ger2015_Cat1	CPXV_Ger2015_Cat1	CPXV_Ger2007_Vole	CPXV_Ger2017_Vole	CPXV_Ger1990_2 CPXV_Ger2014_Human CPXV_No_F2_(reversed) -
CPXV_JagKre08_1	VACV_CVA	CPXV_Ger2010_Raccon CPXV_Ger2		
CPXV_Ger2015_Cat1 VACV_Cop CPXV_Ger2015_Cat1 CPXV_FraAmiens_2016- VACV_Lister CPXV_HumLan08_1	CPXV_Ger2015_Cat1 CPXV_Fin2000_Man CPXV_Fin2000_Man CPXV_EleGri07_1	CPXV_Ger2007_Vole CPXV_Ger2010_Raccon CPXV_Ger2010_Raccon	CPXV, Gar2017, Vole CPXV Elecion2, CPXV Elecion3, CPXV Elecion3, C	CPXV_Ger1990_2 CPXV_Ger2014_Human CPXV_No_F2_(reversed) - TATV_DAH68
CPXV_Ger2015_Cat1 Unknown CPXV_Ger2015_Cat1 CPXV_FraAmiens_2016 - Unknown	Unknown CPXV_Fin2000_Man CPXV_No_H2 CPXV_Ger2002_MKY	CPXV_Ger2007_Vole	990_2	AKMV_Vani_2010 Ian CPXV_Ger2014_Human CPXV_No_F2_(reversed) - CPXV_Cer2014_Human
CPXV_Humwag07 CPXV_Ger1980_EP4 CPXV_Ger2015_Cat1	ECTV_Nav Uhknown CPXV_HumBer07_1 Unknown	CPXV_Ger2007_Vole CPXV_Fra2001_Nancy	CMLV_M96 Unknown CPXU_Ger1990_2	CPXV_Ger2014_Human AKMV_Vani_2010 KV_HumLit08_1 CPXV_HumLue09_1 CPXV_No_F2_(reversed) - CPXV_Ger1980_2
CPXV_CatPot07_1				CPXV_Ger2015_Cat2
CPXV_Ger980_EP4 CPXV_Ger2015_Cat1	ECTV Nav Unknown CPXV_HumBer07_1 Unknown	CPXV_Ger2007_Vole	Unknown CPXV_Ger1990_2	AKMV_Vari_2010     V_HumLi08_1     CPXV_UmuLi09_1     CPXV_Ger2014_Human     Unknown     CPXV_No_F2 (reversed) -     CPXV_Ger1990_2
CPXV_HumBer07_1				CPXV_Ger2015_Cat2
CPXV_Ger1980_EP4	Unknown CPXV_HumBer07_1	CPXV_Ger2007_Vole	Unknown	CPXV_Ger2014_Human 5_Cat1 AKMV_Vani_2010 KV_HumLit08_1 CPXV_HumLue09_1 Unknown CPXV_No_F2_(reversed) -
CPXV_BeaBer04_1	CPXV_Ger2002_MKY		Grav_Garaao_z	CPXV_Ger2015_Cat2
CPXV_Ger1980_EP4 CPXV_Ger2015_Cat1	Unknown Unknow	known Unknown CPXV_Fra2001_Nancy	Unknown CMLV M96 CPXU_Ger1990_2	AKMV_Vani_2010           KV_HumLi08_1         CPXV_HumLue09_1           CPXV_Ger2014_Human           CPXV_No_F2_(reversed) -           CPXV_Ger1990_2
CPXV Ger2013 Alpaca	CPXV_Ger2002_MKY			CPXV_Ger2015_Cat2
CPXV_Ger2015_Cat1	CPXV_HumLue09_1	Unknown CPXV_Fra2001_Nanc	CPXV_Ger1990_2 CPXV_Ger1990_2 Unknown CPXV_Ger1990_2 CPXV_Ger1990_2 CPXV_Ger1990_2 CPXV_GPXV_GPXV	CPXV_Ger2014_Human AKMV_Vani_2010 CPXV_No F2_(reversed) - CPXV_HumLue09_1 Unknown CPXV_Ger1990_2
CPXV_Ger2010_Rat				CPXV_Ger2015_Cat2
CPXV_RatGer09_1	CPXV_Ger2015_Cat1 Unknown CPXV_HumBer07_1 CPXV_HumLue09_1	Unknown CPXV_Ger2015_Cat1 CPXV_Ger2010_Raccool	CPXV_Ger1990_2 CPXV_Ger1990_2 CPXV L_Human Unknown CPXV_Ger2015_Cat1	PXV_HumLi08_1
CRVV RefGer(0, 1	CPXV_HumBer07_1 Unknown	Unknown CPXV_Ger2015_Cat1	CPXV_Ger1990_2 CPXV_Ger1990_2	CPXV_HumGra07_1
VACV_Duke			CPXV_EleGri07_1 CMLV_CMS	CPXV_Ger1990_2 AKMV_Vani_2010
CPXV_Ger2002_MKY	CPXV_HumLue09_1 CPXV_Hum	Mag07_1		CPXV_Ger2014_Human
CPXV_RatGer09_1	V_HumBer07_1	Unknown TATV_DAH68 CPXV_Ger2014	CPXV_Ger1990_2 Unknown C	PXV_HumLit08_1 CPXV_No_F2_(reversed) -
VACV_Duke	CPXV_Ger2013_Alp	paca	CPXV_Ger1990_2 CMLV_M96	CPXV_Ger1990_2 CPXV_Ger2014_Human AKMV_Vani_2010
CPXV_Ama_2015	ECTV_Nav Unknown Unknown Unknown	CPXV_NorwayFeline - Unknown	Unknown CPXV_Ger2017_Alpaca2 CPXV_HumLue09_1	CPXV_Catpox5_wv1 - CPXV_Ger2015_Cat1 CPXV_Ger2015_Cat1 CPXV_Ger2014_Human
Unknown CPXV. Ger2014. Cat1		TATV_DAH68		AKMV_Vani_2010 CPXV_HumLue09_1
CPXV_RatGer09_1	Unknown Unknown	CPXV_Ger2015_Cat1 CPXV Unknown Unknown	/_Ger2015_Cat1 Unknown CMLV_M96	PXV_HumLit08_1 CPXV_No_F2_(reversed) - CPXV_Ger1990_2 CPXV_Ger2014_Human
VACV_Duke CPXV_Ger2017_Vole	CPXV_Ger2002_MKY			AKMV_Vani_2010
CPXV_Swe_H2 - Unknown Unknown CPXV_Ger2015_Cat1 CPXV Ger2017 Alpaca2	Unknown	CPXV_Ger2007_Vole	Unknown Unknown CPXV_Ger20	CPXV_Ger190_2 010_Raccon CPXV_Ger2014_Human CPXV_No_F2_(reversed) - KKMV_Vani_2010
VACV_Cop Unknown CPXV_Ger2015_Cat1	VACV_Duke	CPXV_RatGe	r09_1 Unknown	CPXV_No_F2_(reversed) - CPXV_Ger1990_2
CPXV_RatGer09_1	ECTV_Nav	CPXV_Ger2014_Cat2		CPXV_Ger2014_Human AKMV_Vani_2010 CPXV Ger2012 Alpaca
CPXV EleGri07_1 VACV_Duke Unknown		Unknown		CPXV_Ger1990_2
Unknown CPXV_Ger2015_Cat1	CPXV_Ger2015_Cat1 Unknown	CPXV_Ger2007_Vole	/_Ger2015_Cat1	AKMV_Vani_2010 CPXV_No_F2_(reversed) - CPXV_Ger2014_Human
CPXV_Ger2015_Cat2				CPXV_Ger2014_Human
VACV Cop Unknown CPXV_Ger2015_Cat1	VACV_Duke Unknown ECTV_Nav CPXV_HumLit08_1	CPXV_Ger2014_Cat2	Unknown Unknown	CPXV_Ger2014_Human AKMV_Vani_2010 CPXV_Ger1900_2 CPXV_No_F2_(reversed) -
CPXV_Swe_H2 - Unknown CPXV_RatGer09_1 CPXV_Ger2015_Cat1	Unknown Unknown CPXV_Ger2002_MKY	Unknown CPXV_Ger1990_2 CPXV_Ger2007_Vole	CPXV_GerMygEk938_17 CPXV_Ger2015_Cat1 CPXV_Ger1990_2	CPXV_HumGra07_1 CPXV_Ger2014_Human CPXV_Ger1990_2 Unknown CPXV_Fra2001_Nancy CPXV_Ger2014_Human AKMV Vani 2010
CPXV_Ger2015 Human2	CPXV_Swe_H1_(reversed)	CPXV_HumLan08_1	CV_Ger2017_Alpaca2	CPXV_Ger1990_2 AKMV_Vani_2010
CPXV_Ger2015_Cat1	ECTV_Nav	CPXV_No_F2_(reversed) - CPXV_Ger2007_Vole		CPXV_No_F2_(reversed) - CPXV_Ger2014_Human CPXV_Ger2014_Human CPXV_Ger2014_Human
CPXV_Ger2012_Alpaca CPXV_Swe_H2 - Unknown				
_	CPXV_Ger20	10_Alpaca CPXV_No_F2_(reversed) - CPXV_HumLan08_1	Unknown	CPXV_Ger1990_2 CPXV_No_F2_(reversed) - AKMV_Vani_2010
CPXV_RatGer09_1	CPXV_Ger20	10_Alpaca CPXV_No_F2_(reversed) - CPXV_HumLan08_1 CPXV_Ger2007_Vole	CPXV_Ger1998_2 CPXV_Ger2017 Abaca2	CPXV_Ger1990_2 CPXV_No_F2_(reversed) - AKWV_Vani_2010 CPXV_Ger2014_Human CPXV_Ger2010_MKY CPXV_Ger2014_Human
CPXV_RatGer09_1 CPXV_Ger2015_Cat1 CPXV_Ger2014_Cat2	CPXV_Ge20	10_Alpaca CPXV No.F2. (reversed) - CPXV_Ger2007_Vole	Unknown CPXV_Ger1998_2 CPXV_Ger2017_Apaca2	CPXV, Ger1909.2 CPXV, No. F2. (reversed) - AKMV, Vari 2010 CPXV, Ger2014, Human CPXV, Ger2014, Human Ger1998.2 AKMV, Vari 2010
CPXV_RatGer09_1 CPXV_Ger2015_Cat1 CPXV_Ger2014_Cat2 VACV_Cop CPXV_RatGer09_1 CPX	CPXV_Ge20	10_Alpaca CPXV_No_F2_(reversed) - CPXV_Ger2007_Vole Ger1990_2 Unknown CPXV_HumLan08_1	CPXV_Ger2017_Alpaca2	CPXV, Gar1990, 2 PCVV, Dr. 22 (reversed) AKMV, Vini, 2010 CPXV, Gar2010, JMKV CPXV, GAR200, JMKV CPXV, GAR200
CPXV_RatGer09_1 CPXV_Ger2015_Cat1 CPXV_Ger2014_Cat2 VACV_Cop CPXV_RatGer09_1 CPXV_Cer2010_Raccon	CPXV_Ge20 V_Ge2014_Human CPXV_Ge202_MKY	10_Alpaca CPXV_No_F2_(reversed) - CPXV_Ger2007_Vole Ger1990_2 Unknown CPXV_HumLan08_1 CPXV_No_F2_(reversed) -	CPXV_Ger2017_Alpaca2	CPXV, Gar190, 2 CPXV, Car190, 2 CPXV, CPX (newsol) - CPXV Cer2010, MKY CPXV, Cer2010, MKY CPXV, Car2014, Human CPXV, Gar2010, MKY CPXV, Gar190, 2 CPXV, Gar190, 2 CPXV, Gar190, 2 CPXV, Gar190, 2 CPXV, Gar2014, Human
CPXV_RatGer09_1 CPXV_Ger2015_Cat1 CPXV_Ger2014_Cat2 VACV_Cop CPXV_RatGer09_1 CPXV_Ger2010_Raccon CPXV_Cop CPXV_RatGer09_1 Unknown CPXV_RatGer09_1	CPXV_Se20 V_Ge2014_Human CPXV_Ge2002_MKY Unknown	10_Alpaca CPXV_No_F2_(reversed) - CPXV_Ger2007_Vole Ger1990_2 Unknown CPXV_HumLan08_1 CPXV_No_F2_(reversed) - CPXV_No_F2_(reversed) - CPXV_Cer2014_Cot1	CPXV_Ger1999_2 CPXV_Ger2017_Alpaca2 CPXV_Ger2017_Alpaca2 CPXV_Ger2017_Alpaca2 CPXV_Ger1990_2 CPXV_Ger190_2 CPXV_GF10 CPXV_GF10 CPXV_GF10 CPXV_GF10 CPXV_GF10 CPXV_GF10 CPXV_GF10 CPXV_GF10 CPXV_GF10 CPXV_GF10 CPXV_GF1	CPXV, Gar199, 2 PCPV, No. PC, (newsol) - AXMV, Vani, 2010 CPXV, Ge2010, MKV CPXV, Ge2014, Human CPXV, HumG201 CPXV, Hum2010 CPXV, Hum2010 CPXV
CPXV_RatGer09_1 CPXV_Ger2015_Cat1 CPXV_Ger2014_Cat2 CPXV_Ger2016_Cat1 CPXV_Ger2010_Cat2 CPXV_Ger2010_Raccon CPXV_Ger2010_Raccon CPXV_Ger2010_Raccon CPXV_Ger2010_Raccon CPXV_Ger2011_Cat2 CPXV_Ger2010_Cat2 CPXV_Ge	V_Ger2014_Human Unknown	10_Alpaca CPXV_No_F2_(reversed) - CPXV_Ger2007_Vole  Ger1990_2 Unknown CPXV_No_F2_(reversed) -  CPXV_No_F2_(reversed) -  CPXV_No_F2_(reversed) -  CPXV_F0r22 CPXV_Ger2014_Cat1	CPXV_Ger2017_Alpaca2 CPXV_Ger2017_Alpaca2 CPXV_Ger2017_Alpaca2 CPXV_Ger2017_Alpaca2 CPXV_Ger2017_Alpaca2 CPXV_Ger1990_2 CPXV_Ger1990_2 CPXV_Ger1990_2 CPXV_Ger1990_2 CPXV_Ger1990_2 CPXV_Ger1990_2	CPXV_Gar1992_2 PCPV_N = 22 (newreso) - AKMV_Van_2010 CPXV_Gen2010_MKY CPXV_Gen2010_MKY CPXV_Gen2010_MKY CPXV_Gen2010_MKY CPXV_Gen2010_MKY CPXV_Gen2010_KKY CPXV_Gen2010_CPXV_Gen2012_ CPXV_Gen2012_CPXV_Hama CPXV_Gen2012_CPXV_Hama CPXV_Gen2012_CPXV_Hama CPXV_Gen2012_CPXV_Hama CPXV_Gen2012_CPXV_Hama CPXV_Gen2012_CPXV_Hama CPXV_Gen2012_CPXV_Hama CPXV_Gen2012_CPXV_Hama CPXV_Gen2012_CPXV_Hama CPXV_Gen2012_CPXV_Hama CPXV_Gen2012_CPXV_Hama CPXV_Gen2012_CPXV_Hama CPXV_Gen2012_CPXV_Hama CPXV_Gen2012_CPXV_Hama CPXV_Gen2012_CPXV_Hama CPXV_Gen2012_CPXV_Hama CPXV_Gen2012_CPXV_Hama CPXV_Gen2012_CPXV_HAma CPXV_G

CPXV_Ger 1971_EP1 - CPXV_Ger 1990_2 Unknown CPXV_FraAmiens_2016 - CPXV_FraAmiens_2016 -	 2016 - Vav Unknown CPXV_Aus_1999 CPXV_FraAmie	ns_2016 - 📕 Unknown	CPXV_FraAmiens_2016 -	CPXV_HumLue09_1	CMLV_M96 CPXV	
CPXV_Ber200_role CPXV_BumGra07.1 CPXV_Ger2012_Abaca Unknown Unknown CPXV_BerGi07.1 Unkr RPXV_Utr	CMLV_M96 VACV_Cop CPXV_Ama_2015 own Unknown Unknown	CPXV_Ger1980_EP4	CPXV_Ger2014_Human	CPXV_RatGer09_1 CPXV_c	er2002_MKY CPXV_G CPXV_Ger2017_Vole PXV_Utr	CPXV_HumLit08_1 er2010_Alpaca CPXV_Ger1998_2 Unknown
CPXV_HumGra07_1 CPXV Ger2012_Alpaca Unknown Withown RPXV_Utr CPXV_Eeq6002_1	CMLV_M96 CPXV_Ama_2015 CPXV_Ama_2015 Unknown Unknown	TATV_DAH68 ole PXV_Ger2002_MKY CPXV_Ger1980_EP4	RPXV_Utr	CPXV_Ger2015_Human2	PXV_Ger2012_Alpaca	CPXV_Ger1998_2 CPXV_HumLit08_1 CPXV_Ger2010_Alpaca
CPXV Ger91 CPXV_HumGra07_1 CPX	TATV_DAH68 Unknov IV_Ger1998_2 CMLV_M96 CFLV_Ger2010_Racoon	wn XV_BeaBer04_1 CPXV_Ger1980_EP4	Unknown	Unknown	CPXV_Ger2017_Vole CPXV CPXV_Ger2012_Alpaca	Unknown Ger2010_Alpaca CPXV_Ger1998_2
CPXV_Ger1998_2 CPXV_HumGra07_1 CPXV_FM2282 CPXV_FM2282	CPXV_Ger2015_Cat1 CPXV_Ger2015_Cat1 CPXV_Ger31 Ger2014_Human	1 DAH68 CPXV_Ger9	CPXV_Ger2015_Ca CPXV_HumLue09_1	CPXV_Ger2012_Alpaca	CPXV_Ger91 CPX CPXV_Aus_1999 CF CPXV_Aus_CMLV M	/_Ger1990_2 XV_Ger2014_Human 96 CPXV_No_F2_(reversed) AKMV_Vani_2010 CPXV_Ger2015_Cat2
CPXV Aus 1999 CPXV/FraAmiens_2016 - Unknown Unknown	Unknown CPXV_EleGn07_1 CPXV_Ger2010_Racoon	191	CPXV_FM2292	Unknown CPXV_GerMygEk938_17		TV_Nav
CPXV_Ger2015_Cat Unknown AKPV : CPXV_Ger2012_Alpaca VACV_Lister	2015 CPXV_Ger Unknown VACV Cop CPXV_Ger2010_Raccon	91 CPX	CPXV_NorwayFeline - V_Ger2017_Vole Unknown CPXV_HumLan08_1	CPXV_Ger1998_2 CPXV_F	n2000_Man CPXV_Ge	Unknown 2002_MKY AKMV_Vani_2010 CPXV_Ger2014_Human bc F2 (reversed) -
CPXV-No-F1	CPXV_Ger2010_AI	paca CPXV_HumLan08_1		CPXV_C	er91 CPXV_Ger2017_Vole	CPXV_BeaBer04_1
CPXV NorwayFeline -	Unknown	CPXV_Ger1980_EP4		Unknow	CPXV_Ger2017_Vole	CPXV_HumLit08_1
AKMV_Vani_2010 CPXV_Ger1998_2 AKMV_2013_85	CPXV_Ger2010_Alpaca	CPXV_HumLan08_1 CPXV_Ger2002_MKY		CPXV_C	er91 CPXV_Ger2017_Vole	CPXV_BeaBer04_1
CPXV_No_H1  AKMV_Vani_2010 CPXV_Ger1998_2 CPXV_No_F2 (reversed).	CPXV_Ger2010_Alpaca	CPXV_HumLan08_1 CPXV_Ger2002_MKY		CPXV_C	er91 CPXV_Ger2017_Vole	CPXV_BeaBer04_1
Unknown Unknown RPXV_Ulr CPXV_Ger2014_Human	Unknown	CPXV_Ger1980_EP4 CPXV_EleGri07_1		Unknow	CPXV_Ger2017_Vole	CPXV_HumLit08_1
CPXV_HumGra07_1 CPXV_Ger2010_MKY CPXV_HumGra07_1 CPXV_Ger2010_MKY CPXV_Swe H2-	CPXV_Ger2010_Racoon	CPXV_EleGri07_1 CPXV_Ger1980_EP4			CPXV_Ger2017_Vole	CPXV_HumLit08_1
RPXV_Utr Unknown CPXV_Swe_H1 (reversed)	Unknov	CPXV_EleGri07_1 wn CPXV_Ger1980_EP4		Unknown	n CPXV_Ger2017_Vole RPXV_Utr	CPXV_HumLit08_1
CPXV_CheNova_DK_2014 -	Unknov	CPXV_EleGri07_1 wn CPXV_Ger1980_EP4			n CPXV_Ger2017_Vole CPXV_Ger2012_Alpaca	CPXV_HumLit08_1
CPXV_HumLue09_1	Unknown	Unknown		Unknow	CPXV_Ger2012_Alpaca	CPXV_No_F2_(reversed) -
CPXV_Ger1990_2	CPXV Ger2010 Raccon	CPXV_EleGri07_1 CPXV_EleGri07_1 CPXV_EleGri07_1	_	Unknown	CPXV_Ger2012_Alpaca	CPXV_HumLit08_1
CPXV Ger2015 Cat1	CPXV_Ger2015_Human2 Unknown	CPXV_EleGri07_1 CPXV_Ger1980_EP4		CPXV_Ger	MygEk938_17 Ger2002_MKY CPXV_Ger2012_Alpaca	
CPXV_LeleGnU/_1 CPXV FraAmiens_2016 Unknown Unknown CPXV_RatGer09_ RPXV_Utr	CPXV_Ger2010_Racoon	CPXV_EleGri07_1		Unknow	CPXV_Ger2017_Vole CPXV_Ger2017_Vole CPXV_Utr	CPXV_HumLit08_1
Unknown RPXV_Utr	CPXV_Ger2010_MKY	CPXV_EleGri07_1		Unknow	/n U CPXV_Ger2017_Vole	nknown VARV_Garcia_1966 Unknown
CPXV_RalGer09_1 CPXV_Catpox5_wv1 -	CPXV_Ger2010_Raccon	CPXV_Ger1980_EP4		Ri Unknow	n CPXV_Utr	CPXV_HumLit08_1
CPXV Br Unknown Unknown CPXV_RatGer09_1 RPXV_Utr	Unknown CPXV_HumBer07_1	CPXV_EleGri07_1		Unknow Ri	n CPXV_Ger2017_Vole	CPXV_HumLit08_1
CMLV_M96 CPXV_Ge/2015_Cat1 CPXV_Ge/2012_Appeaa AKPV : Ukknow VACV_Lister	VACV Cop 2015 Unknown	r91 Unknown	CPXV_NorwayFeline - V_Ger2017_Vole CPXV_HumLan08_1 Unknown	CPXV_Ger1998_2	12000_Man	2002_MKY CPXV_Ger2014_Human Unknown AKMV_Vani_2010
CPXV Ger2015 Cat 1 VACV Lister CPXV Ger2012 Apaca AKPV Unknown VACV_Lister	VACV_Cop CPXV_Ge 2015 CPXV_Ger2010_Raccon	r91 Unknown	CPXV_NorwayFeline - V_Ger2017_Vole CPXV_HumLan08_1 Unknown	CPXV_Ger1998_2	CPXV_Ge	2002_MKY CPXV_Ger2014_Human Unknown AKMV_Vani_2010
MPXV ZAR					VA	CV_CVA VARV_Garcia_1966 Unknown


**Figure S3.** Recombination analysis of 87 orthopoxvirus (OPXV) core genomes with RPD4. Schematic sequence display depicting colour-coded representations of the analyzed sequences and the locations of detected recombination events in the 87 OPXV core genomes. The detected recombination events were detected for at least 5 of 7 methods (RDP, GENECONV, Bootscan, MaxChi, Chimaera, SiScan, and 3Seq) with significant p-values ( $p \le 0.01$ ).



0.04

**Figure S4.** Bayesian inference phylogenetic tree of 62 conserved genes from 87 orthopoxviruses. Diamonds at the nodes indicate posterior probabilities >0.9. The scale bar represents expected substitutions per site. The main five cowpox virus (CPXV) clusters were highlighted in different colors: pink (Ectromelia-Abatino-like CPXV), blue (CPXV-like 1), green (CPXV-like 2), turquoise blue (Vaccinia-like CPXV) and orange (Variola-like CPXV).



**Figure S5.** Bayesian inference phylogenetic tree of 87 OPXV core genomes. Posterior probabilities are shown on the right side of each node and only posterior probabilities above 0.9. are shown. The scale bar represents expected substitutions per site. The main five cowpox virus (CPXV) clusters were highlighted in different colors: pink (Ectromelia-Abatino-like CPXV), blue (CPXV-like 1), green (CPXV-like 2), turquoise blue (Vaccinia-like CPXV) and orange (Variola-like CPXV).



0.03

**Figure S6.** Maximum Likelihood phylogenetic tree of 87 orthopoxvirus whole genomes. Bootstrap values were inferred from 1000 rapid bootstrap replicates. Diamonds at the nodes indicate bootstrap values >80%. The scale bar indicates substitution per site. The main five cowpox virus (CPXV) clusters were highlighted in different colors: pink (Ectromelia-Abatino-like CPXV), blue (CPXV-like 1), green (CPXV-like 2), turquoise blue (Vaccinia-like CPXV) and orange (Variola-like CPXV).



0.04

**Figure S7.** Bayesian inference phylogenetic tree of 87 OPXV whole genomes. Diamonds at the nodes indicate posterior probabilities > 0.9. The scale bar represents expected substitutions per site. The main five cowpox virus (CPXV) clusters were highlighted in different colors: pink (Ectromelia-Abatino-like CPXV), blue (CPXV-like 1), green (CPXV-like 2), turquoise blue (Vaccinia-like CPXV) and orange (Variola-like CPXV).



0.03

**Figure S8.** Maximum Likelihood phylogenetic tree based on orthopoxvirus orthologous genes. Bootstrap values were inferred from 1000 rapid bootstrap replicates. Diamonds at the nodes indicate bootstrap values >80%. The scale indicates substitution per site. The main five cowpox virus (CPXV) clusters were highlighted in different colors: pink (Ectromelia-Abatino-like CPXV), blue (CPXV-like 1), green (CPXV-like 2), turquoise blue (Vaccinia-like CPXV) and orange (Variola-like CPXV).



**Figure S9.** Bayesian maximum clade credibility (MCC) tree of 62 non-recombinant conserved genes of 55 CPXV genomes. The MCC tree was generated using BEAST 1, using a log-normal relaxed clock, coalescent Bayesian skyline population, HKY substitution model and four gamma categories. The numbers on the nodes indicate the time of the most recent common ancestor of the clades. Diamonds at the nodes indicate posterior probability values >0.9. The main five CPXV clusters were highlighted in different colors: pink (Ectromelia-Abatino-like CPXV), blue (CPXV-like 1), green (CPXV-like 2), turquoise blue (Vaccinia-like CPXV) and orange (Variola-like CPXV).



**Figure S10.** New classification of cowpox virus (CPXV) based on phylogenetic inference (from 87 OPXV whole genomes, core genomes and orthologous genes), patristic and genetic distances. Diamonds at the nodes indicate bootstrap values >80%. The main five CPXV clusters were highlighted in different colors: pink (Ectromelia-Abatino-like CPXV), blue (CPXV-like 1), green (CPXV-like 2), turquoise blue (Vaccinia-like CPXV) and orange (Variola-like CPXV).

Table S1. List of strains used in the	phylogenetic analysis
---------------------------------------	-----------------------

ConBank number accession	Virus spacias	Strain
MH916006	Abatino magaganor vinus	Stram
MH818998	Additino macacapox virus	
MH607142	Aknmeta virus	2013-85
MH60/141	Aknmeta virus	2013-88
MH60/143	Aknmeta virus	Vani_2010
MN 240300	Alaskapox virus	2015
A 1009089	Camelpox virus	CMS
NC_003391	Camelpox virus	M-96
LIN8/9483	Cowpox virus	Amadeus 2015
HQ407377	Cowpox virus	Austra 1999 Per Par 04/1
NC 003663	Cowpox virus	Brighton Red
KC813506	Cowpox virus	CatPot07/1
KY549144	Cowpox virus	CatPox5 wvl
KY569019	Cowpox virus	CheNova DK 2014
KC813507	Cowpox virus	EleGri07/1
HO420893	Cowpox virus	Finland 2000 MAN
LN864566	Cowpox virus	FM2292
HQ420894	Cowpox virus	France_2001_Nancy
LT883663	Cowpox virus	France Amiens 2016
DQ437593	Cowpox virus	Germany 91-3
HQ420895	Cowpox virus	Germany_1980_EP4
HQ420896	Cowpox virus	Germany_1990_2
HQ420897	Cowpox virus	Germany_1998_2
HQ420898	Cowpox virus	Germany_2002_MKY
LT896722	Cowpox virus	Ger/2007/Vole
LT896718	Cowpox virus	Ger/2010/Alpaca
LT896721	Cowpox virus	Ger 2010 MKY
L1896730	Cowpox virus	Ger/2010/Racoon
L1896728	Cowpox virus	Ger/2010/Rat
L1896/26	Cowpox virus	Cor/2012/Alpaca
L1890/19 LT806722	Cowpox virus	Ger/2014/Cet1
L 1896725	Cowpox virus	Ger/2014/Cat1
L1890725	Cowpox virus	Ger/2014/Cat2
L1995220	Cowpox virus	Ger/2015/Catl
LT896727	Cowpox virus	Ger/2015/Cat2
LT993232	Cowpox virus	Ger/2015/Human2
LT896732	Cowpox virus	Ger/2017/Alpaca2
LT993228	Cowpox virus	Ger/2017/common vole FMEimka
KY463519	Cowpox virus	Ger/1971 EP1
LR812035	Cowpox virus	GerMygEK 938/17
X94355	Cowpox virus	GRI-90
KC813508	Cowpox virus	HumAac09/1
KC813509	Cowpox virus	HumBer07/1
KC813510	Cowpox virus	HumGra07/1
KC813512	Cowpox virus	HumKre08/1
KC813492	Cowpox virus	HumLan08/1
KC813493	Cowpox virus	HumLit08/1
KC813494	Cowpox virus	HumLue09/1
KC813495	Cowpox virus	HumMag07/1
KC813497	Cowpox virus	JagKre08/1
KC813498	Cowpox virus	JagKre08/2
KC813500	Cowpox virus	MonKre08/4
HQ420899	Cowpox virus	Norway_1994_MAN
K 1549151	Cowpox virus	NorwayFeine
KC813501	Cowpox virus	RatAac09/1
L N864565	Cowpox virus	RatGer09/1 PatPoy00
OP125541	Cowpox virus	No-F1
OP125540	Cowpox virus	No-F2
OP125539	Cowpox virus	No-H1
OM460002	Cowpox virus	No-H2
OP125538	Cowpox virus	Swe-H1
OP125537	Cowpox virus	Swe-H2
KY554976	Ectromelia virus	Hampstead
NC_004105	Ectromelia virus	Moscow
JQ410350	Ectromelia virus	ERPV
KJ563295	Ectromelia virus	Naval
DQ011154	Monkeypox virus	Congo_2003_358
DQ011156	Monkeypox virus	Liberia_1970_184
KJ642617	Monkeypox virus	Nigeria-SE-1971
NC_003310	Monkeypox virus	Zaire-96-I-16
NC_008291	Taterapox virus	Dahomey 1968
AY484669	Vaccinia virus	Rabbitpox virus Utrecht
DQ792504	Vaccinia virus	MNR-76
M35027	Vaccinia virus	Copenhagen
AM501482	Vaccinia virus	chorioallantois vaccinia virus Ankara (CVA)
DQ439815	Vaccinia virus	Duke
AY6/82/6	Vaccinia virus	Lister
¥16/80	Variola virus	Garcia-1966
DQ43/581	Variola virus	Bangiadesn 1975 v/5-550 Banu
DQ441429	Variola virus	Siarra Lacro 1060 (1/62 252)
V258055	Variola virus	VTv21
NC 031032 1	Volepor virus	
VD142760	Raccompox virus	LA
NC 031038	Skunknov virus	WA

Orthogroup	VACV_Cop	AKMV_20 13_85	AKMV_ 13_8	20 AKMV_1 8 ni_201	Va AKPV_2 0 5	D1 CMLV_CN S	1 CMLV_M	9 CPXV_AM A_2015	CPXV_AUS _1999 CPX	V_BR CPXV_Be Ber04:1	a CPXV_Cat CPXV_Ca Pot07:1 pox5_wi	t CPXV_Che 1 Nova_DK 2014	e CPXV_Ele G Gri07:1	CPXV_FIN _2000_M _AN	/_FM	XV_FRA CPX 001_Na Am ncy	V_Fra ens20 91	ER CPXV_G _1980E	ER CPXV_GE P4 _1990_2	R CPXV_GE 1998_2	R CPXV_GER 2002_MK Y	CPXV_Ger CPXV_GRI 1971_EP1 1	CPXV_Ger 2007:Vole	r: CPXV_Ger: 2010:Alpa ca 2010:MK	r: CPXV_Ger 2010:Raco on	CPXV_Ger: 20 2010:Rat	V_Ger: CPX 2:Alpa 201 ca	V_Ger: 3:Alpa ca	V_Ger: CPXV_Ge 4:Cat1 2014:Cat	r: CPXV_Ge 2014:Hui an	r: CPXV_Ger 2015:Cat:	:: CPXV_Ger: CPX 1 2015:Cat2 2019 a	/_Ger: CPXV_ i:Hum 2017: n2 ca	_Ger: CPX Alpa 201	IV_Ger: 17:Vole 8:17	CPXV_Hu mAac09:1	CPXV_Hu CPXV_H mBer07:1 mGra07:	u CPXV_H :1 mKre08	lu CPXV I:1 mLan	_Hu CPXV_Hu 108:1 mLit08:1
OG0000027	VACV-Cop-024;Type	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	. 1
OG0000028	VACV-Cop-025;Bcl-2-like	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1	l .	1 1	1	1 1	1	1	. 1
OG0000029	VACV-Cop-032;Anti-apoptotic	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	. 1
OG0000030	VACV-Cop-034;ANK-containing	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	. 1
OG0000031	VACV-Cop-037;Serpin	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	1
06000032	VACV-Cop-046;001Pase	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1	-	1 1	1	1 1	1	1	1
060000033	VACV_Cop.053-Hwothetical	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	1
OG0000035	VACV-Cop-054;Hypothetical	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	1
OG0000036	VACV-Cop-056;S-S	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1	L	1 1	1	1 1	1	1	1
OG0000037	VACV-Cop-057;Essential	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	. 1
OG0000038	VACV-Cop-059;RhoA	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	. 1
OG0000039	VACV-Cop-060;EEV	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	. 1
OG0000040	VACV-Cop-062;Palmitylated	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1	_	1 1	1	1 1	1	1	1
060000041	VACV-Cop-065;Unknown	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	1
OG0000043	VACV-Cop-068:DNA-binding	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	1
OG0000044	VACV-Cop-070;Poly	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	1
OG0000045	VACV-Cop-071;IEV	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1	1	1 1	1	1 1	1	1	. 1
OG0000046	VACV-Cop-073;RNA	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	. 1
OG0000047	VACV-Cop-076;Virion	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	. 1
OG0000048	VACV-Cop-079;ER-localized	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	1
060000049	VACV-Cop-081;DNA	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	1
OG0000050	VACV-Cop-087-Glutaredoxin	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1	-	1 1	1	1 1	1	1	1
OG0000052	VACV-Cop-088;DNA-binding	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	1
OG0000053	VACV-Cop-089;IMV	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1	1	1 1	1	1 1	1	1	. 1
OG0000054	VACV-Cop-090;ssDNA-binding	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	. 1
OG0000055	VACV-Cop-091;Ribonucleotide	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	. 1
OG0000056	VACV-Cop-093;IMV	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	1
06000057	VACV-Cop-094;Telomere-binding	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1	-	1 1	1	1 1	1	1	
OG0000059	VACV-Cop-096/RNA	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	1
OG0000060	VACV-Cop-097;Metalloprotease	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	1
OG0000061	VACV-Cop-099;VLTF	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1	l .	1 1	1	1 1	1	1	. 1
OG0000062	VACV-Cop-100;Glutaredoxin-like	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	. 1
OG0000063	VACV-Cop-101;FEN1-like	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	. 1
06000064	VACV-Cop-102;RNA	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	1
060000065	VACV-Cop-104;Vinon	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1	-	1 1	1	1 1	1	1	
OG0000067	VACV-Cop-108:Entry/fusion	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	1
OG0000068	VACV-Cop-109;IMV	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	. 1
OG0000069	VACV-Cop-110;Viral	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	. 1
OG0000070	VACV-Cop-112;ss/dsDNA	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	. 1
OG0000071	VACV-Cop-113;Entry	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1	-	1 1	1	1 1	1	1	1
060000072	VACV-Cop-115;Thymdine	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1	-	1 1	1	1 1	1	1	1
OG0000074	VACV-Cop-118;IMV	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1	-	1 1	1	1 1	1	1	1
OG0000075	VACV-Cop-121;Tyr/Ser	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	1
OG0000076	VACV-Cop-122;IMV	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1	L	1 1	1	1 1	1	1	. 1
OG0000077	VACV-Cop-123;IMV	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	. 1
OG0000078	VACV-Cop-126;DNA	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	. 1
OG0000079	VACV-Cop-127;Viral	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	. 1
06000080	VACV-Cop-128/mRNA	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	1
06000081	VACV-Cop-130, Vinion	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1	-	1 1	1	1 1	1	1	1
OG0000083	VACV-Cop-135;NTPase_	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	1
OG000084	VACV-Cop-139;RNA	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	. 1
OG0000085	VACV-Cop-140;Carbonic	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	1
OG0000086	VACV-Cop-141;mRNA	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	1
OG0000087	VACV-Cop-142;mRNA	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	1
060000088	VACV-Cop-143;ATPase_	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1	-	1 1	1	1 1	+ 1	1	1
060000089	vwcv-c0p-14b)mkNA VACV_Con-147-Trimeric	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1	-	1 1	1	1 1	1	1	1
OG0000091	VACV-Cop-149:VLTF-2	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	1
OG0000092	VACV-Cop-150:VLTF-3	1	1	1	1	1	1	1		1 1	1 1	1	1	1	1	1	1 1	1	1	1	1	1 1	1	1 1	1	1	1	1	1 1	1	1	1	1 1		1 1	1	1 1	1	1	1

## Table S2. List of orthologous genes from 87 orthopoxviruses used in this study

		AKMV 20 AKM	V 20 AKN	(V Va A	KPV 201 C1		CMLV M9	CPXV AM	CPXV AUS		CPXV Bea (	CPXV Cat	(PXV Cat	CPXV_Che CPXV_Ele	CPXV_FIN	CPXV FM	CPXV_FRA	CPXV_Fra	CPXV GER	CPXV GER CPXV (	FR CPXV	SER CPXV_GER	c	CPXV_Ger	CPXV Ger: CP	XV_Ger: CPXV	Ger: CPX	V_Ger: CPXV	er: CPXV_Ger	CPXV_Ger:	CPXV Ger:	CPXV_Ger: CPXV_Ger:	CPXV Ger:	CPXV_Ger: CPXV_G	er: CPXV Ge	CPXV_Ge	er CPXV Hu	срху ни с	PXV Hu (	CPXV Hu C	PXV Hu CPXV Hu
Orthogroup	VACV_Cop	13_85 13	.88 ni_	2010	5	s	6	A_2015	_1999	CPXV_BR	Ber04:1	Pot07:1	pox5_wv1	Nova_DK_ 2014 Gri07:1	_2000_M AN	2292	_2001_Na ncy	Amiens20 16	91	_1980EP4 _1990	2 _1998	_2 _2002_MK	CPXV_GRI 1	1971_EP1 1	2007:Vole	110:Alpa ca 2010	2011 MKY	0:Raco on 2010:1	at ca	2013:Alpa ca 2014:Cat1	2014:Cat2	2014:Hum an 2015:Cat1	2015:Cat2	2015:Hum 2017:Al an2 ca2	pa 2017:Vol	e MygEK_9 8:17	93 mAac09:1	mBer07:1 m	/Gra07:1 n	mKre08:1 m <sup>4</sup>	Lan08:1 mLit08:1
OG0000093	VACV-Cop-152;P4b	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1 :	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000095	VACV-Cop-156;RNA	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000096	VACV-Cop-157;Viral	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000097	VACV-Cop-158;VETF-L	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000098	VACV-Cop-161;VITF-3	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000099	VACV-Cop-163;P4a	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1 :	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000100	VACV-Cop-167;Viral	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1 :	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000101	VACV-Cop-168;Virion	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000102	VACV-Cop-169;IMV	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000103	VACV-Cop-170;Essential	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000104	VACV-Cop-172;Core	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000105	VACV-Cop-173;Myristylated	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000106	VACV-Cop-174;IMV	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1 :	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000107	VACV-Cop-175;DNA	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000108	VACV-Cop-176;Zinc	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000109	VACV-Cop-177;IMV	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000110	VACV-Cop-178;DNA	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000111	VACV-Cop-181;Holliday	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000112	VACV-Cop-182;VITF-3	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1 :	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000113	VACV-Cop-183;RNA	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1 :	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000114	VACV-Cop-187;IMV	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000115	VACV-Cop-188;IMV	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000116	VACV-Cop-189;RNA	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000117	VACV-Cop-197;C-type	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000118	VACV-Cop-200;IEV	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1 :	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000119	VACV-Cop-204;CD47-like_	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1 :	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000120	VACV-Cop-208;Chemokine	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000121	VACV-Cop-209;Profilin-like	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000122	VACV-Cop-211;3	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000124	VACV-Cop-218;ATP-dependent	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000126	VACV-Cop-230;Ser/Thr	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000127	VACV-Cop-236;Ankyrin	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1 :	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000128	VACV-Cop-237;EEV	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000130	VACV-Cop-241;Soluble	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000133	VACV-Cop-033;Alpha	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000136	VACV-Cop-049;Ribonucleotide	1	1	1	1	1	1	1	1	1	1	1	0	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000137	VACV-Cop-067;Non-functional	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000138	VACV-Cop-072;dsRNA-binding	1	1	1	1	1	1	1	1	1	1	1	0	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1 :	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000139	VACV-Cop-084;Virion	1 :	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1 :	1	1 1	1	1 1	1	0 1	1	1 1	1	1	1	1	1	1	1 1
OG0000140	VACV-Cop-098;Entry/fusion	1 :	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1 :	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000141	VACV-Cop-103;NLPc/P60	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1 :	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000142	VACV-Cop-114;Virion	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000143	VACV-Cop-117;RNA	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000144	VACV-Cop-125;VLTF-4	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000145	VACV-Cop-138;Morphogenesis_	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000146	VACV-Cop-151;S-S	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1 :	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000147	VACV-Cop-191;IMV	1 :	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	0 1	1	1 1	1	1	1	1	1	1	1 1
OG0000148	VACV-Cop-193;Hypothetical	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1 :	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000149	VACV-Cop-196;EEV	1 :	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000150	VACV-Cop-199;MHC	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000151	VACV-Cop-213;IL-1/TLR	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000152	VACV-Cop-227;Hemagglutinin	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1 :	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000153	VACV-Cop-247;Serpin	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	0	1	1 :	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000154	VACV-Cop-248;Hypothetical	1 :	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	0	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000157	VACV-Cop-074;Virosome	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000158	VACV-Cop-077;Myristylated	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000159	VACV-Cop-133;Uracil-DNA	1	1	1	1	1	1	1	1	1	1	1	0	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000160	VACV-Cop-162;Viral	1	1	1	1	1	1	1	1	1	1	1	0	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000161	VACV-Cop-194;ATPase/DNA	1	1	1	1	1	1	1	1	1	1	1	1	0 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000162	VACV-Cop-210;Type	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	0	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	0	1	1	1	1	1 1
OG0000163	VACV-Cop-212;Inactive	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000164	VACV-Cop-216;Thymidylate	1	1	1	1	1	1	1	1	1	1	1	0	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000166	VACV-Cop-028;Complement	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000167	VACV-Cop-055;Cytoplasmic	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	0	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	0	1	1 1
OG0000170	VACV-Cop-035;NFkB	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000171	VACV-Cop-044;Host	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000172	VACV-Cop-052;36kDa	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1
OG0000174	VACV-Cop-254;IFN-alpha/beta	1	1	1	1	1	1	1	1	1	1	1	1	0 1	1	1	1	1	1	1 1	1	1	1	0	1	1 :	1	1 1	1	1 1	1	1 1	1	1 1	1	1	1	1	1	1	1 1

Orthogroup	VACV_Cop	CPXV_ mLue0	Hu CPXV 9_1 mMag	_Hu CP ;07:1 K	XV_Jag ( re08:1	CPXV_Jag Kre08:2	CPXV_Mc nKre08:4	CPXV_NC R_1994_N AN	CPXV_NoP	F CPXV_NoF CPX	(V_No ( H1 )	CPXV_Nor CPXV_Rat wayFeline Aac09:1	CPXV_Rat Ger09:1	CPXV_Rat Pox09	CPXV_Swe H1	CPXV_Swe H2	ECTV_ERF	ECTV_Ha	ECTV_Mo s	<sup>IS</sup> ECTV_Nav	HSPV_MI R76	MPXV_CO MPXV_ G_2003_3 R_1970 58 84	LB MPXV_NE _1 Ria_SE_19 71 R	A No_H2	OPXV_Ab atino	RCNV_Her man	RPXV_Utr	SKPV_WA	TATV_DA H68	VACV_CVA	VACV_Cop	VACV_DU KE	VACV_List er I	VARV_BG \ D75_Banu	ARV_GA VARV_J R_1966 46_ya	N VARV_ n 68	SLE VAR	V_VD 21 VP	YXV_CAL
0.00000077																																					_		
060000027	VACV-Cop-024;Type	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	_	1	1
060000028	VACV-C0p-023,BCI-2-like	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
060000025	VACV-Cop-032,ANK-containing	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
060000030	VACV-Cop-037-Semin	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
060000031	VACV-Cop-037,3eipin	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
060000033	VACV-Cop-047:Kelch-like	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
OG0000034	VACV-Cop-053:Hypothetical	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
OG0000035	VACV-Cop-054:Hypothetical	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
OG0000036	VACV-Cop-056:S-S	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
OG0000037	VACV-Cop-057:Essential	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
OG000038	VACV-Cop-059;RhoA	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
OG0000039	VACV-Cop-060;EEV	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
OG0000040	VACV-Cop-062;Palmitylated	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
OG0000041	VACV-Cop-063;Unknown	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
OG0000042	VACV-Cop-066;Unknown	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
OG0000043	VACV-Cop-068;DNA-binding	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
OG0000044	VACV-Cop-070;Poly	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
OG000045	VACV-Cop-071;IEV	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
OG0000046	VACV-Cop-073;RNA	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
OG0000047	VACV-Cop-076;Virion	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
OG0000048	VACV-Cop-079;ER-localized	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
OG0000049	VACV-Cop-081;DNA	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
OG0000050	VACV-Cop-083;Sulfhydryl	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	_	1	1
OG0000051	VACV-Cop-087;Glutaredoxin	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
OG0000052	VACV-Cop-088;DNA-binding	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
OG0000053	VACV-Cop-089;IMV	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	_	1	1
OG0000054	VACV-Cop-090;ssDNA-binding	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	_	1	1
OG0000055	VACV-Cop-091;Ribonucleotide	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	_	1	1
OG0000056	VACV-Cop-093;IMV	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	_	1	1
060000057	VACV-Cop-094;Telomere-binding	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	_	1	1
000000058	VACV-Cop-095;Vinon	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	_	1	1
000000059	VALV-COP-U96;KNA	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	_	1	1
000000000	VACV-Cop-097;Wetailoprotease	1	1	·	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	-	1	1
060000001	VACV-Cop-095,VETP	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	-	1	1
060000063	VACV-Cop-101-FEN1-like	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
060000064	VACV-Cop-102;RNA	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
06000065	VACV-Cop-104-Virion	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
OG0000066	VACV-Cop-107:VLTF-1	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
OG0000067	VACV-Cop-108;Entry/fusion	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
OG0000068	VACV-Cop-109;IMV	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
OG0000069	VACV-Cop-110;Viral	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
OG0000070	VACV-Cop-112;ss/dsDNA	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
OG0000071	VACV-Cop-113;Entry	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
OG0000072	VACV-Cop-115;Thymidine	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
OG0000073	VACV-Cop-116;Poly	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
OG0000074	VACV-Cop-118;IMV	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
OG0000075	VACV-Cop-121;Tyr/Ser	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
OG0000076	VACV-Cop-122;IMV	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
OG0000077	VACV-Cop-123;IMV	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
OG0000078	VACV-Cop-126;DNA	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
OG0000079	VACV-Cop-127;Viral	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	_	1	1
OG000080	VACV-Cop-128;mRNA	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
OG000081	VACV-Cop-130;Virion	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
OG0000082	VACV-Cop-132;Virion	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
UG0000083	VACV-Cop-135;NTPase_	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	_	1	1
UG0000084	VACV-Cop-139;RNA	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	+	1	1
06000085	VALV-Lop-140;Carbonic	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	+	1	1
06000086	VALV-Lop-141;mRNA	1	1	-	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
060000087	VALV-LOP-142;MRNA	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	+	1	1
060000088	VALV-LOP-143;ATPase_	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	+	1	1
060000089	VACV-CUP-146/IIIKNA	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	- 1	+	1	1
060000090	VACV-Cop-147,1110E1L	1	1		1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	+	1	1
0000000031	VACV.Cop.1503/ITE-2	1	1	-	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1 1	1 1	1	1	1	1	1	1	1	1	1	1	1	1 1	1		1	1
0.00000000	1101 Cop 100,1011-0	1	1		*	+	+	1 ÷		*	-		+	*	*	-	+	-	+	+ I	-	1 1 1	1 1	+	+ +		+	+	1	+	+	+		-	- 1	1		*	+

Orthogroup	VACV_Cop (P)	XV_Hu ue09_1 r	CPXV_Hu CPXV_Ja mMag07:1 Kre08:1	ag CPXV 1 KreQ	'_Jag CP! 18:2 nK	XV_Mo Kre08:4	2PXV_NO 1994_M AN	CPXV_NoF 1	CPXV_NoF 2	CPXV_No H1	CPXV_Nor CPXV_Rat wayFeline Aac09:1	CPXV_Rat Ger09:1	CPXV_Rat Pox09	CPXV_Swe H1	e CPXV_Swe ECTV_E H2 V	RP ECTV_H mptead	a ECTV_N	Mos ECTV_N	av HSP	PV_MN G R76	1PXV_CO M i_2003_3 R 58	MPXV_LB 1970_1 84	MPXV_NE Ria_SE_19 71	MPXV_ZA R	No_H2	OPXV_Ab atino	RCNV_Her man	r RPXV_Utr SKPV_WA	TATV_DA H68	VACV_CV	a vacv_co	P VACV_D	U VACV_i er	List VARV_BG D75_Banu	VARV_GA R_1966	VARV_JPN 46_yam	VARV_SLE 68	VARV_VD 21	VPXV_CAL
OG0000093	VACV-Cop-152;P4b	1	1 1	1	l	1	1	1	1	1	1 1	1	1	1	1 1	1	1	1		1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG000095	VACV-Cop-156;RNA	1	1 1	1	L	1	1	1	1	1	1 1	1	1	1	1 1	1	1	1		1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000096	VACV-Cop-157;Viral	1	1 1	1	L	1	1	1	1	1	1 1	1	1	1	1 1	1	1	1	_	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
060000097	VACV-Cop-158;VETF-L	1	1 1	1		1	1	1	1	1	1 1	1	1	1	1 1	1	1	1	+	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000099	VACV-Cop-163;94a	1	1 1	1		1	1	1	1	1	1 1	1	1	1	1 1	1	1	1	-	1	1	1	1	1	1	1	1	1 1	1	1	1	1	+	1	1	1	1	1	1
OG0000100	VACV-Cop-167;Viral	1	1 1	1	1	1	1	1	1	1	1 1	1	1	1	1 1	1	1	1	+	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000101	VACV-Cop-168;Virion	1	1 1	1	L	1	1	1	1	1	1 1	1	1	1	1 1	1	1	1		1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000102	VACV-Cop-169;IMV	1	1 1	1	L	1	1	1	1	1	1 1	1	1	1	1 1	1	1	1		1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000103	VACV-Cop-170;Essential	1	1 1	1	L	1	1	1	1	1	1 1	1	1	1	1 1	1	1	1		1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000104	VACV-Cop-172;Core	1	1 1	1	L	1	1	1	1	1	1 1	1	1	1	1 1	1	1	1		1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000105	VACV-Cop-173;Myristylated	1	1 1	1	1	1	1	1	1	1	1 1	1	1	1	1 1	1	1	1	_	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
060000105	VACV-Cop-1/4;IMV	1	1 1	1		1	1	1	1	1	1 1	1	1	1	1 1	1	1	1	-	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
060000107	VACV-Cop-175;DNA	1	1 1	1		1	1	1	1	1	1 1	1	1	1	1 1	1	1	1	+	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000109	VACV-Cop-177:IMV	1	1 1	1		1	1	1	1	1	1 1	1	1	1	1 1	1	1	1		1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000110	VACV-Cop-178;DNA	1	1 1	1	L	1	1	1	1	1	1 1	1	1	1	1 1	1	1	1		1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000111	VACV-Cop-181;Holliday	1	1 1	1	L	1	1	1	1	1	1 1	1	1	1	1 1	1	1	1		1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000112	VACV-Cop-182;VITF-3	1	1 1	1	L	1	1	1	1	1	1 1	1	1	1	1 1	1	1	1		1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000113	VACV-Cop-183;RNA	1	1 1	1	L	1	1	1	1	1	1 1	1	1	1	1 1	1	1	1		1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000114	VACV-Cop-187;IMV	1	1 1	1	L	1	1	1	1	1	1 1	1	1	1	1 1	1	1	1	_	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000115	VACV-Cop-188;IMV	1	1 1	1	1	1	1	1	1	1	1 1	1	1	1	1 1	1	1	1		1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000116	VACV-Cop-189;RNA	1	1 1	1		1	1	1	1	1	1 1	1	1	1	1 1	1	1	1	_	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
060000117	VACV-Cop-197;C-type	1	1 1	1		1	1	1	1	1	1 1	1	1	1	1 1	1	1	1	-	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000119	VACV-Cop-200;EV	1	1 1	1		1	1	1	1	1	1 1	1	1	1	1 1	1	1	1	-	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000120	VACV-Cop-208;Chemokine	1	1 1	1		1	1	1	1	1	1 1	1	1	1	1 1	1	1	1		1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000121	VACV-Cop-209;Profilin-like	1	1 1	1	L	1	1	1	1	1	1 1	1	1	1	1 1	1	1	1		1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000122	VACV-Cop-211;3	1	1 1	1	L	1	1	1	1	1	1 1	1	1	1	1 1	1	1	1		1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000124	VACV-Cop-218;ATP-dependent	1	1 1	1	L	1	1	1	1	1	1 1	1	1	1	1 1	1	1	1		1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000126	VACV-Cop-230;Ser/Thr	1	1 1	1	L	1	1	1	1	1	1 1	1	1	1	1 1	1	1	1		1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000127	VACV-Cop-236;Ankyrin	1	1 1	1	L	1	1	1	1	1	1 1	1	1	1	1 1	1	1	1	_	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
060000128	VACV-Cop-237;EEV	1	1 1	1	1	1	1	1	1	1	1 1	1	1	1	1 1	1	1	1	+	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
060000130	VACV-cop-241,50000e	1	1 1	1		1	1	1	1	1	0 1	1	1	1	1 1	1	1	1	-	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000136	VACV-Cop-049:Ribonucleotide	1	1 1	1		1	1	1	1	1	1 1	1	1	1	1 1	1	1	1	+	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000137	VACV-Cop-067;Non-functional	1	1 1	1	L	1	1	1	1	1	0 1	1	1	1	1 1	1	1	1		1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000138	VACV-Cop-072;dsRNA-binding	1	1 1	1	L	1	1	1	1	1	1 1	1	1	1	1 1	1	1	1		1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000139	VACV-Cop-084;Virion	1	1 1	1	L	1	1	1	1	1	1 1	1	1	1	1 1	1	1	1		1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000140	VACV-Cop-098;Entry/fusion	1	1 1	1	L	1	1	1	1	1	1 1	1	1	1	1 1	1	1	1		1	1	1	1	1	1	0	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000141	VACV-Cop-103;NLPc/P60	1	1 1	1	L	1	1	1	1	1	0 1	1	1	1	1 1	1	1	1	_	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000142	VACV-Cop-114;Virion	1	1 1	1		1	1	1	1	1	0 1	1	1	1	1 1	1	1	1	+	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
060000143	VACV-C0p-117;RNA	1	1 1	1		1	1	1	1	1	0 1	1	1	1	1 1	1	1	1	-	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000145	VACV-Cop-128;Wombogenesis	1	1 1	1		1	1	1	1	1	1 1	1	1	1	1 1	1	1	1		1	1	1	0	1	1	1	1	1 1	1	1	1	1	+	1	1	1	1	1	1
OG0000146	VACV-Cop-151;S-S	1	1 1	1	L	1	1	1	1	1	0 1	1	1	1	1 1	1	1	1		1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000147	VACV-Cop-191;IMV	1	1 1	1	L	1	1	1	1	1	1 1	1	1	1	1 1	1	1	1		1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000148	VACV-Cop-193;Hypothetical	1	1 1	1	L	1	1	1	1	1	0 1	1	1	1	1 1	1	1	1		1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000149	VACV-Cop-196;EEV	1	1 1	1	L	1	1	1	1	1	0 1	1	1	1	1 1	1	1	1		1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000150	VACV-Cop-199;MHC	1	1 1	1	L	1	1	1	1	1	1 1	1	1	1	1 1	1	1	1	_	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	0	1	1
060000151	VACV-Cop-213;IL-1/TLR	1	1 1	1		1	1	1	1	1	0 1	1	1	1	1 1	1	1	1	_	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
060000152	VACV-Cop-227;Hemaggiutinin	1	1 1	1		1	1	1	1	1	1 1	1	1	1	1 1	1	1	1	-	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000155	VACV-Cop-248;Hypothetical	1	1 1	1		1	1	1	1	1	1 1	1	1	1	1 1	1	1	1		1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000157	VACV-Cop-074;Virosome	1	1 1	1	1	1	1	1	1	1	0 1	1	1	1	1 1	1	1	1		1	1	1	1	0	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000158	VACV-Cop-077;Myristylated	1	1 1	1	L	1	1	1	1	1	0 1	1	1	1	1 1	1	1	1		1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	0	1	1	1	1
OG0000159	VACV-Cop-133;Uracil-DNA	1	1 1	1	L	1	1	1	1	1	0 1	1	1	1	1 1	1	1	1		1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000160	VACV-Cop-162;Viral	1	1 1	1		1	1	1	1	1	0 1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000161	VACV-Cop-194;ATPase/DNA	1	1 1	1	L	1	1	1	1	1	0 1	1	1	1	1 1	1	1	1	_	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000162	VACV-Cop-210;Type	1	1 1	1		1	1	1	1	1	1 1	1	1	1	1 1	1	1	1	+	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
060000163	VALV-Cop-212;Inactive	1	1 1	1	-	1	1	1	1	1	1 1	1	1	1	1 1	0	1	1	+	1	1	1	1	1	1	1	1	1 1	0	1	1	1	1	1	1	1	1	1	1
060000166	VACV-Cop-216;I Rymidylate	1	1 1	1	-	1	1	1	1	1	0 1	1	1	1	1 1	1	1	1	+	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000167	VACV-Cop-055:Cytoplasmic	1	1 1	1	+	0	1	1	1	1	1 1	1	1	1	1 1	1	1	1	+	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000170	VACV-Cop-035;NFkB	1	1 1	1	1	1	1	1	1	1	1 1	1	1	1	1 0	0	0	0	+	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000171	VACV-Cop-044;Host	1	1 1	1	L	1	1	1	1	1	1 1	1	1	1	1 0	0	0	0		1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000172	VACV-Cop-052;36kDa	1	1 1	1	L	1	1	1	1	1	1 1	1	1	1	1 0	0	0	0		1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1	1	1	1	1
OG0000174	VACV-Cop-254;IFN-alpha/beta	1	1 1	1	I T	1	1	1	1	1	0 1	1	1	1	1 1	1	1	1	T	1	1	1	1	1	1	1	1	1 1	1	1	1	1	0	1	1	1	1	1	1

## Table S3. List of 62 conserved genes from 87 orthopoxviruses used in this study

	VACV_Cop
1	A11R
2	A16L
3	A18R
4	A1L
5	A21L
6	A22R
7	A23R
8	A281
a	A291
10	A21
11	A5R
12	A51
12	
1/	D10K
15	
16	E10P
17	ELON
10	
10	E01
20	CED
20	
21	אפט
22	
23	
24	HOR
25	J3K
20	JSL
27	LIR
28	L4R
29	LSR
30	A12L
31	AI3L
32	A14L
33	A15L
34	A19L
35	A20E
36	A34R
37	A6L
38	A8R
39	D3R
40	D9R
41	E4L
42	E8R
43	F12L
44	F13L
45	F15L
46	F17R
47	G2R
48	G4L
49	G5.5.R
50	G7L
51	G8R
52	H1L
53	H7R
54	I1L
55	12L
56	I3L
57	15L
58	I6L
59	A2.5L
60	G6R
61	H5R
62	J1R

Table S4. List of strains used in the evolution molecular analysis.

GenBank number accession	Virus species	Strain	Country	Year
LN879483	Cowpox virus	Amadeus 2015	Germany	2015
HQ407377	Cowpox virus	Austria 1999	Austria	1999
KC813491	Cowpox virus	BeaBer04/1	Germany	2004
NC_003663	Cowpox virus	Brighton Red	UK	1937
KC813506	Cowpox virus	CatPot07/1	Germany	2007
KY549144	Cowpox virus	CatPox5 wv1	UK	1982
KY569019	Cowpox virus	CheNova DK 2014	Denmark	2014
KC813507	Cowpox virus	EleGri07/1	Germany	2007
HQ420893	Cowpox virus	Finland 2000 MAN	Finland	2000
LN864566	Cowpox virus	FM2292	Germany	2011
HQ420894	Cowpox virus	France_2001_Nancy	France	2001
LT883663	Cowpox virus	France Amiens 2016	France	2016
DQ437593	Cowpox virus	Germany 91-3	Germany	1991
HQ420895	Cowpox virus	Germany_1980_EP4	Germany	1980
HQ420896	Cowpox virus	Germany 1990 2	Germany	1990
HQ420897	Cowpox virus	Germany_1998_2	Germany	1998
HQ420898	Cowpox virus	Germany_2002_MKY	Germany	2002
LT896722	Cowpox virus	Ger/2007/Vole	Germany	2007
LT896718	Cowpox virus	Ger/2010/Alpaca	Germany	2010
LT896721	Cowpox virus	Ger 2010 MKY	Germany	2010
LT896730	Cowpox virus	Ger/2010/Racoon	Germany	2010
LT896728	Cowpox virus	Ger/2010/Rat	Germany	2010
LT896726	Cowpox virus	Ger/2012/Alpaca	Germany	2012
LT896719	Cowpox virus	Ger/2013/Alpaca	Germany	2013
LT896723	Cowpox virus	Ger/2014/Cat1	Germany	2014
LT896725	Cowpox virus	Ger/2014/Cat2	Germany	2014
LT993226	Cowpox virus	Ger/2014/Human	Germany	2014
LT896724	Cowpox virus	Ger/2015/Cat1	Germany	2015
LT896727	Cowpox virus	Ger/2015/Cat2	Germany	2015
LT993232	Cowpox virus	Ger/2015/Human2	Germany	2015
LT896732	Cowpox virus	Ger/2017/Alpaca2	Germany	2017
LT993228	Cowpox virus	Ger/2017/common vole FMEimka	Germany	2017
KY463519	Cowpox virus	Ger/1971_EP1	Germany	1971
LR812035	Cowpox virus	GerMygEK 938/17	Germany	2017
X94355	Cowpox virus	GRI-90	Russia	1990
KC813508	Cowpox virus	HumAac09/1	Germany	2009
KC813509	Cowpox virus	HumBer07/1	Germany	2007
KC813510	Cowpox virus	HumGra07/1	Germany	2007
KC813512	Cowpox virus	HumKre08/1	Germany	2008
KC813492	Cowpox virus	HumLan08/1	Germany	2008
KC813493	Cowpox virus	HumLit08/1	Lithunia	2008
KC813494	Cowpox virus	HumLue09/1	Germany	2009
KC813495	Cowpox virus	HumMag07/1	Germany	2007
KC813497	Cowpox virus	JagKre08/1	Germany	2008
KC813498	Cowpox virus	JagKre08/2	Germany	2008
KC813500	Cowpox virus	MonKre08/4	Germany	2008
HQ420899	Cowpox virus	Norway_1994_MAN	Norway	1994
KY549151	Cowpox virus	NorwayFeline	Norway	1994
KC813501	Cowpox virus	RatAac09/1	Germany	2009
KC813503	Cowpox virus	RatGer09/1	Germany	2009
LN864565	Cowpox virus	RatPox09	Germany	2009
OP125541	Cowpox virus	No-F1	Norway	1994
OP125540	Cowpox virus	No-F2	Norway	1999
OP125539	Cowpox virus	No-H1	Norway	1994
OM460002	Cowpox virus	No-H2	Norway	2001
OP125538	Cowpox virus	Swe-H1	Sweden	1990
OP125537	Cowpox virus	Swe-H2	Sweden	1990

					CPXV-No-	1				CPXV-No-F	2			CPX	V-No-H1					CPX	V-Swe-H1	<u> </u>				CPXV-Swe	<u>H2</u>	
Function	VACV_Cop	CPXV_Br	CDS	Start St	p Length	Direction	Similarity (%)	CDS S	tart Stop	Length	Direction	Similarity (%)	CDS Start	Stop	Length	Direction	Similarity (%) 🔽	CDS	Start	Stop La	ngth	Direction	Similarity (%	CDS	Start Stop	Length	Direction	Similarity (%)
CPV-B-002		CPXV002	NoF1-001	894 11	21 228	(-)	85.135	NoF2-001 11	246 1473	228	(-)	85.135	· ·	-		-	-	SweH1-001	795	1034	240	(-)	83.333	SweH2-001	768 1001	234	(-)	85.526
Chemokine binding protein (Cop-C23L)	B29R/C23L	vCCI/CPXV003	NoF1-002	1150 18	37 738	(-)	91.129	NoF2-002 1:	502 2239	738	(-)	91.935	NoH1-001 1235	1972	738	(-)	92.339	SweH1-002	1063	1812	750	(-)	91.968	SweH2-002	1030 1779	750	(•)	93.574
CPV-B-004	-	CXPV004	N-E1.002	10(1 20	1074	0	01.000	N-T2 002 2	212 2207	1074	0	02.00	N. III 002 2046	0000	1074		02.00	- III 002	1013	20/7 1	054		02.622	C. 112.002	1070 2024	1054		02 522
INF receptor (CmB) (Cop-C22L) Ankyrin (Con-C19L)	B25R/C22L B25R/C19L	CPXV005 CPXV006	NoF1-003	3112 48	10/4	(-)	91.808	NoF2-003 2. NoF2-004 34	464 5230	10/4	(-)	92.09	NoH1-002 2046 NoH1-003 3197	4963	10/4	(-)	92.09	SweH1-005	3053	4819 1	767	(-)	92.537	SweH2-003 SweH2-004	3020 4786	1056	(-)	92.557
Ankyrin-like repeat containing protein		CPXV007	NoF1-005	4960 50	19 90	(-)	100	NoF2-005 53	312 5401	90	(-)	93.1	NoH1-004 5045	5134	90	(-)	100	SweH1-005	4844	4975	132	(-)	82.927	SweH2-005	4811 4942	132	(-)	82.927
Ankyrin (Cop-C17L)	B23R/C17L	CPXV008	NoF1-006	5089 70	95 2007	(-)	96.731	NoF2-006 54	441 7447	2007	(-)	97.177	NoH1-005 5174	7180	2007	(-)	97.028	SweH1-006	5015	7036 2	.022	(-)	96.154	SweH2-006	4982 7003	2022	(-)	96.006
Hypothetical protein (Cop-C16L)	C16L	CPXV009/CPXV222	NoF1-007	7310 77	462	(-)	96.732	NoF2-007 7	640 8101	462	(-)	96.732	NoH1-006 7350	7811	462	(-)	96.732	SweH1-007	7238	7699	162	(-)	97.386	SweH2-007	7189 7650	462	(-)	97.386
Alpha amanatin target protein (Cop-N2L) PTP Keleh domnin containing protein (Cop A55D)	N2L	CPXV010	NoF1-008	7942 85	35 654	(-)	95.392	NoF2-008 8.	271 8924	654	(-)	95.392	NoH1-007 7981	8634	654	(-)	95.392	SweH1-008	7866	8513	148	(-)	95.814	SweH2-008	7818 8465	648	(-)	95.814
Ankyrin (Cop-B20R)	B20R	CPXV011	NoF1-005	9828 118	43 2016	(-)	95,745	NoF2-009 9.	0247 12268	2022	(-)	96.049	NoH1-008 8937 NoH1-009 9920	11935	2016	(-)	95,745	- SweH1-009	8962	10926 1	965	(-)	95,745	SweH2-009	8913 1087	/ 1965	(-)	95.745
C-type lectin domain containing protein		CPXV012	NoF1-011	12070 122	79 210	(-)	97.101	NoF2-011 12	2495 12704	210	(-)	98.551	NoH1-010 12162	12371	210	(-)	98.551	SweH1-010	10958	11440	483	(-)	55.224	SweH2-010	10909 11391	483	(-)	55.224
BTB Kelch-domain containing protein; CRL comple x (Cop-A55R)	A55R	CPXV013	NoF1-012	12707 133	18 612	(-)	92.611	NoF2-012 13	3467 13742	276	(-)	97.619	NoH1-011 13135	13410	276	(-)	97.62	SweH1-011	11505	13082 1	578	(-)	96.571	SweH2-011	11456 13039	1584	(-)	96.205
TNF receptor (CrmB) (Cop-C22L)	C22L	CPXV014	NoF1-013	13393 140	01 609	(-)	97.03	NoF2-013 13	817 14425	609	(-)	98.02	NoH1-012 13485	14093	609	(-)	98.02	SweH1-012	13156	13758	303	(-)	97.99	SweH2-012	13113 13715	603	(-)	97.99
Ankyrin (Con-R18R)	- RISR	CPXV016	NoF1-014	13998 143	30 333	(-)	98.182	NoF2-014 14 NoF2-015 14	14/22 14/34 1878 17131	2304	(-)	98.182	NoH1-013 14090 NoH1-014 14496	14422	2304	(-)	98.182	SweH1-015	14181	14120 .	/00	(-)	97.273	SweH2-015 SweH2-014	13/12 140//	2295	(-)	90.304
Ankyrin (CPXV-017)		CPXV017	NoF1-016	16984 182	91 1308	(-)	96.092	NoF2-016 17	606 18913	1308	(-)	96.322	NoH1-015 17210	18517	1308	(-)	96.322	SweH1-015	16874	18181 1	.308	(-)	95.862	SweH2-015	16738 1804	1308	(-)	95.862
MPV-Z-N3R		CPXV018	NoF1-017	18390 185	05 516	(-)	91.813	NoF2-017 19	012 19527	516	(-)	91.813	NoH1-016 18616	19131	516	(-)	91.813	SweH1-016	18280	18804	525	(-)	91.954	SweH2-016	18144 18659	516	(-)	92.982
Ankyrin (Cop-B18R)	B18R	CPXV019	NoF1-018	18968 215	83 2616	(-)	77.855	NoF2-018 19	22304	2715	(-)	86.916	NoH1-017 19194	21908	2715	(-)	86.916	SweH1-017	18867	21278 2	.412	(-)	92.04	SweH2-017	18722 21142	. 2421	(-)	91.574
Host range protein Seamted ECE like metric (Can C11B)	C11P	CPXV020 VCErCPVV021	NoF1-019	21631 221	49 519	(-)	97.674	NoF2-019 22 NoF2-020 22	2246 22752	507	(-)	97.647	NoH1-018 21850	22356	507	(-)	97.647	SweH1-018	21374	21892	i19 420	(-)	97.674	SweH2-018	21238 21756	519	(-)	97.674
IL-1 recentor antagonist (Cop-C11K)	CIOL	CPXV021	NoF1-020	22310 222	41 420 89 996	(+)	96 375	NoF2-020 22 NoF2-021 23	501 24496	996	(+)	96.073	NoH1-020 23105	24100	996	(+)	96.073	SweH1-020	22038	23606	990	(+)	93.656	SweH2-019	22481 23470	990	(+)	93.656
Zinc finger-like protein		CPXV023	NoF1-022	24404 251	32 729	(+)	99.174	NoF2-022 25	033 25761	729	(+)	98.76	NoH1-021 24630	25358	729	(+)	98.76	SweH1-021	24115	24843	129	(+)	95.868	SweH2-021	23979 2470	729	(+)	95.868
Soluble IL-18 binding protein (Bsh-D7L)	D7L	CPXV024	NoF1-023	25281 256	61 381	(-)	96.825	NoF2-023 25	5910 26290	381	(-)	98.413	NoH1-022 25507	25887	381	(-)	98.413	SweH1-022	24995	25375	381	(-)	98.413	SweH2-022	24859 25239	381	(-)	98.413
Ankyrin/Host Range (Bang-D8L)	D8L	VHR1/CPXV025	NoF1-024	25720 271	35 2016	(-)	95.827	NoF2-024 26	350 28359	2010	(-)	95.815	NoH1-023 25947	27956	2010	(-)	95.815	SweH1-023	25434	27449 2	016	(-)	95.529	SweH2-023	25298 27313	2016	(-)	95.38
ANK-containing protein Ankwing Type LHEN registeree (Con-COL)	C91	CPXV026 CPXV027	NoF1-025	2/849 280	40 192	(-)	95	NoF2-025 28 NoF2-026 28	5473 28664 1841 20751	192	(-)	95	NoH1-024 28070 NoH1-025 28428	28261	192	(-)	95	SweHI-024	27564	27/61	198	(-)	95	SweH2-024 Small2_025	27428 27625	198	(-)	95
Unknown (Cop-CSL)	CSL	CPXV028	NoF1-027	30160 307	17 558	(-)	98,919	NoF2-027 30	0794 31351	558	(-)	100	NoH1-025 20430 NoH1-026 30397	30954	558	(-)	100	SweH1-025	29879	30436	558	(-)	100	SweH2-025	29751 30306	558	(-)	100
Type 1 IFN inhibitor (Cop-C7L)	C7L	CPXV029	NoF1-028	30789 312	41 453	(-)	100	NoF2-028 31	420 31872	453	(-)	100	NoH1-027 31023	31475	453	(-)	100	SweH1-027	30505	30957	453	(-)	100	SweH2-027	30377 30829	453	(-)	100
Bcl-2-like protein, IFN-beta inhibitor (Cop-C6L )	C6L	CPXV030	NoF1-029	31472 319	39 468	(-)	98.71	NoF2-029 32	2103 32570	468	(-)	98.71	NoH1-028 31706	32173	468	(-)	98.71	SweH1-028	31186	31653	468	(-)	98.71	SweH2-028	31058 31525	468	(-)	98.71
Kelch-like protein (Cop-CSL)	C5L	CPXV031	N. Et. 020	22222 224	40 270		09.4	N. F2 020 22	002 22200	270		00.4	N. 111 020 22504	22002	tap 270		00.4	- III 020	21097	22240	202		02.6	C 112 020	21050 2222	1 262		02.6
Ketch-like protein (Cop-CSL)	CAL	CPXV032 CPXV033	NoF1-030	32272 320	49 3/8 57 948	(-)	98.4	NoF2-030 32 NoF2-031 33	341 34291	951	(-)	98.4	NoH1-029 32506 NoH1-030 32944	32883	951	(-)	98.4	SweH1-029	31980	32348	451	(-)	95.886	SweH2-029 SweH2-030	31858 32220	303	(-)	95.8
Complement binding (secreted) (Cop-C3L)	C3L	CPXV034	NoF1-032	33724 345	18 795	(-)	96.198	NoF2-032 34	358 35152	795	(-)	97.338	NoH1-031 33961	34755	795	(-)	97.338	SweH1-031	33433	34227	795	(-)	95.437	SweH2-031	33305 3409	795	(-)	95.437
POZBTB Kelch domain protein (Cop-C2L)	C2L	CPXV035	NoF1-033	34581 361	19 1539	(-)	98.828	NoF2-033 35	5215 36753	1539	(-)	99.219	NoH1-032 34818	36356	1539	(-)	99.219	SweH1-032	34290	35828 1	539	(-)	98.242	SweH2-032	34162 35700	1539	(-)	98.242
Putative TLR signalling inhibitor (Cop-C1L)	C1L	CPXV036	NoF1-034	36188 368	26 639	(-)	99.528	NoF2-034 36	822 37517	696	(-)	99.567	NoH1-033 36425	37120	696	(-)	99.567	SweH1-033	35899	36594	596	(-)	99.134	SweH2-033	35771 36466	696	(-)	99.134
Anti-apoptotic Bci-2-like protein (Cop-N1L) Alpha amonatin tarnet protein (Cop.N2L)	NIL N2I	CPXV05/ CPXV038	NoF1-035	30808 372	21 554	(-)	99.145	NoF2-035 37 NoF2-036 37	504 37857 1980 28510	554	(-)	99.145	NoH1-034 3/10/ NoH1 025 27582	3/460	521	(-)	99.145	SweHI-034	305/8	37507	57	(-)	95.581	SweH2-034 Small2_035	36450 36806	35/	(-)	96.581
ANK-containing protein: aportosis inihibitor (C op-M1L)	MIL	CPXV038 CPXV039	NoF1-030	37916 393	31 1416	(-)	97.674	NoF2-030 37 NoF2-037 38	38510 3552 39967	1416	(-)	97.674	NoH1-035 37585 NoH1-036 38155	39570	1416	(-)	97.674	SweH1-035 SweH1-036	37638	39059 1	422	(-)	98.097	SweH2-035 SweH2-036	37510 3893'	1422	(-)	98.097
NFkB inhibitor (Cop-M2L)	M2L	CPXV040	NoF1-038	39309 399	71 663	(-)	98.182	NoF2-038 39	945 40607	663	(-)	97.727	NoH1-037 39548	40210	663	(-)	97.727	SweH1-037	39037	39699	563	(-)	96.818	SweH2-037	38909 39571	663	(-)	96.818
Ankyrin/NFkB inhibitor (Cop-K1L)	K1L	CPXV041	NoF1-039	40095 409	52 858	(-)	98.587	NoF2-039 40	0731 41588	858	(-)	97.173	NoH1-038 40334	41191	858	(-)	97.173	SweH1-038	39826	40680	855	(-)	97.535	SweH2-038	39698 40552	855	(•)	97.535
Serpin 1,2,3 (Cop-K2L)	K2L	SPI3/CPXV042	NoF1-040	41310 424	31 1122	(-)	98.123	NoF2-040 41	908 43029	1122	(-)	98.391	NoH1-039 41863	42984	1122	(-)	98.391	SweH1-039	41023	42141 1	119	(-)	97.319	SweH2-039	40854 41972	. 1119	(-)	97.051
Phospholinase-D-like protein (Cop-K4L)	K3L K4L	CPXV045 CPXV044	NoF1-041 NoF1-042	42482 421	48 207 82 1275	(-)	97.727	NoF2-041 43 NoF2-042 43	406 44680	1275	(-)	97.727	NoH1-040 43035 NoH1-041 43361	45501	1275	(-)	97.727	SweH1-040 SweH1-041	42195	42459 .	275	(-)	97.727	SweH2-040 SweH2-041	42350 4362/	1275	(-)	97.727
Monoglyceride lipase (Cop-K5L)	K5L	CPXV045	NoF1-043	44110 449	40 831	(-)	98.551	NoF2-043 44	708 45538	831	(-)	98.188	NoH1-042 44663	45493	831	(-)	98.188	SweH1-042	43821	44651	831	(-)	98.551	SweH2-042	43652 44483	831	(-)	98.551
Host immune response repressor (Cop-K7R)	K7R	CPXV046	NoF1-044	45078 455	27 450	(+)	100	NoF2-044 45	677 46126	450	(+)	100	NoH1-043 45632	46081	450	(+)	100	SweH1-043	44790	45239	450	(+)	100	SweH2-043	44621 45070	450	(+)	100
CPV-B-047		CPXV047				1					1		i	over	tap	. 1								1			<u> </u>	
Caspase-9 (apoptosis) inhibitor (mitochondrial- associated) (Cop-FIL)	FIL	CPXV048 CPXV040	NoF1-045	45601 463	44 744	(-)	95.618	NoF2-045 46	6200 46955	756	(-)	94.422	NoH1-044 46155	46919	765	(-)	92.913	SweH1-044	45310	46095	/86	(-)	93.103	SweH2-044	45141 45920	780	(-)	91.12
Kelch-like protein (Cop-F3L)	F3L	CPXV049 CPXV050	NoF1-040	46811 482	53 1443	(-)	97.708	NoF2-040 40 NoF2-047 47	47398	1443	(-)	97.708	NoH1-045 40919 NoH1-046 47386	48828	1443	(-)	97.708	SweH1-045	46562	40338 48004 1	443	(-)	98.958	SweH2-045 SweH2-046	46387 4782	1443	(-)	98.958
Ribonucleotide reductase small subunit (Cop-F4L )	F4L	CPXV051	NoF1-048	48264 492	65 1002	(-)	99.099	NoF2-048 48	8875 49834	960	(-)	99.06	NoH1-047 48839	49798	960	(-)	99.06	SweH1-047	48015	49016 1	002	(-)	98.198	SweH2-047	47840 48841	1002	(-)	98.198
36kDa major membrane protein (Cop-F5L)	F5L	CPXV052	NoF1-049	49255 502	20 966	(-)	96.904	NoF2-049 49	867 50832	966	(-)	98.142	NoH1-048 49831	50796	966	(-)	98.142	SweH1-048	49006	49974	)69	(-)	94.427	SweH2-048	48831 49799	969	(-)	94.427
Hypothetical protein (Cop-F6L)	F6L	CPXV053	NoF1-050	50250 504	65 216	(-)	98.592	NoF2-050 50	862 51077	216	(-)	98.592	NoH1-049 50826	51041	216	(-)	98.592	SweH1-049	50004	50219	216	(-)	98.592	SweH2-049	49829 50044	216	(-)	98.592
Hypomenical protein (Cop-F/L) Oxtonlosmic nutein (Cop-F8L)	F/L F8L	CPXV054 CPXV055	NoF1-051	51003 512	20 240	(-)	97.551	NoF2-051 51 NoF2-052 51	491 51688	252	(-)	90.380	NoH1-050 51057 NoH1-051 51449	51502	240	(-)	98./05	SweH1-050	50635	50832	198	(-)	98.703	SweH2-050 SweH2-051	50456 5065'	240	(-)	98.703
S-S bond formation pathway protein substrate (C op-F9L)	F9L	CPXV056	NoF1-053	51261 518	99 639	(-)	99.057	NoF2-053 51	749 52387	639	(-)	99.057	NoH1-052 51707	52345	639	(-)	99.057	SweH1-052	50893	51531	539	(-)	99.057	SweH2-052	50714 51352	639	(-)	99.057
Essential Ser[Thr kinase morph (Cop-F10L)	F10L	CPXV057	NoF1-054	51886 532	05 1320	(-)	99.772	NoF2-054 52	374 53693	1320	(-)	99.772	NoH1-053 52332	53651	1320	(-)	99.772	SweH1-053	51518	52837 1	320	(-)	100	SweH2-053	51339 52658	; 1320	(•)	100
VV_Cop-F ORF D		CPXV058				1					1			over	tap												<u> </u>	
RhoA signalling inhibitor, virus release protei n (Cop-F11L)	FIIL	CPXV059 CPXV060	NoF1-055	53228 542	92 1065	(-)	98.305	NoF2-055 53	54780	1065	(-)	98.023	NoH1-054 53674	54738	1065	(-)	98.023	SweH1-054	52860	53924 1	065	(-)	98.87	SweH2-054	52681 53745	1065	(-)	99.153
Palmitylated KEV membrane elyconrotein (Con-F13 L)	F13L	CPXV000 CPXV061	NoF1-050	56273 573	91 1119	(-)	99.309	NoF2-057 56	623 30727 6761 57879	1905	(-)	99.462	NoH1-055 56719	57837	1903	(-)	99.194	SweH1-055	55932	57050 1	119	(-)	99.211	SweH2-055	55753 5687	1905	(-)	99.211
Unknown (Cop-F14L)	F14L	CPXV062	NoF1-058	57409 576	30 222	(-)	98.63	NoF2-058 57	897 58118	222	(-)	98.63	NoH1-057 57855	58076	222	(-)	98.63	SweH1-057	57068	57295	228	(-)	97.333	SweH2-057	56889 57116	228	()	97.333
CPV-B-063		CPXV063	NoF1-059	57677 578	35 159	(+)	98.077	NoF2-059 58	8165 58323	159	(+)	98.077	NoH1-058 58123	58281	159	(+)	98.077	SweH1-058	57342	57500	159	(+)	100	SweH2-058	57163 57321	159	(+)	100
Unknown conserved protein (Cop-F15L)	F15L	CPXV064	NoF1-060	57903 583	79 477	(-)	98.101	NoF2-060 58	389 58865	477	(-)	98.101	NoH1-059 58347	58823	477	(-)	98.101	SweH1-059	57568	58044	177	(-)	98.101	SweH2-059	57389 57865	477	(-)	98.101
Non-tunctional Serine Kecombinase (Cop-F10L) DNA-hinding physiohonotein (VP11): mTOR antagon ist (Con-F17D)	F10L F17D	CPXV065	NoF1-061	58579 590	80 /02 48 204	(-)	98.09b 90.01	NoF2-061 58 NoF2-062 50	5872 59567 630 50025	30K	(-) (+)	99.1.54	NoH1-060 58830 NoH1-061 50500	59802	306	(-) (+)	98.02	SweH1-060	58800	59114	306	(-)	97.835	SweH2-060 SweH2 061	58630 5802	090	(-)	97.855
Poly (A) nolymerase catalytic subunit (VP55) (C on-E1L)	EIL	CPXV000 CPXV067	NoF1-062	59445 608	4 1440	(+)	99.582	NoF2-002 59 NoF2-063 59	932 61371	1440	(+)	99.582	NoH1-062 59890	61329	1440	(+)	99.582	SweH1-062	59111	60550 1	440	(+)	99.791	SweH2-067	58932 6037	1440	(+)	99.791
IEV morphogenesis (Cop-E2L)	E2L	CPXV068	NoF1-064	60881 630	94 2214	(-)	99.186	NoF2-064 61	368 63581	2214	(-)	99.186	NoH1-063 61326	63539	2214	(-)	99.186	SweH1-063	60547	62760 2	214	(-)	99.729	SweH2-063	60368 62581	2214	()	99.729
dsRNA-binding protein, IFN resistance/PKR inhib itor (Z-DNA binding) (Cop-E3L)	E3L	CPXV069	NoF1-065	63225 631	97 573	(-)	98.421	NoF2-065 63	3711 64283	573	(-)	98.421	NoH1-064 63669	64241	573	(-)	98.421	SweH1-064	62896	63468	573	(-)	94.737	SweH2-064	62717 63289	573	(-)	94.737
RNA polymerase subunit (RPO30) (Cop-E4L)	E4L	CPXV070	NoF1-066	63852 646	37 786	(-)	100	NoF2-066 64	338 65123	786	(-)	100	NoH1-065 64296	65081	786	(-)	100	SweH1-065	63525	64310	/86	(-)	99.617	SweH2-065	53346 64131	786	(-)	99.617
Virosome component (Cop-ESK) Virian protein (Cop-ESR)	ESK F6R	CPXV0/1 CPXV072	NoF1-067	65830 674	10 954 33 1704	(+)	92.19	NoF2-067 65 NoF2-068 66	308 68011	954	(+)	95.41/	NoH1-060 65201 NoH1-067 66266	67969	904 1704	(+)	99.41/	SweH1-066	65581	67284	704	(+)	94.557	SweH2-066 SweH2-067	54231 65210 65431 6712	960	(+)	94.557
Myristylated protein (Cop-E7R)	E7R	CPXV072	NoF1-069	67595 680	92 498	(+)	93.939	NoF2-069 68	073 68570	498	(+)	93.333	NoH1-068 68031	68528	498	(+)	93.939	SweH1-068	67349	67846	498	(+) (+)	93.939	SweH2-068	67199 6769	498	(+)	93.939

## Table S5. Predicted genes in CPXV-No-F1, CPXv-No-F2, CPXV-No-H1, CPXv-Swe-H1 and CPXV-Swe-H2 compared to reference genomes CPXV-Brighton (CPXV\_BR)

| ER-localized membrane protein, virion core prot ein (Cop-E8R)  | E8R   | CPXV074  | NoF1-070 68203 6   
   
   
   | 024 822   
   
   
   | (+)   | 99.634   | NoF2-070 68681 69502   
   
  | 822 (+)  
  | 99.63  | NoH1-069  
   
   | 68639 69460   | 822   
  | (+)   | 99.634  | SweH1-069 67955 68776 822  
   | (+)   
  | 99.634   
   | SweH2-069   
   | 67805  | 68626  | 822   
  | (+)  | 99.634  |
|--|---|--
--
--
--
--
--
---|---
--
--
--
---|---
--
--
--
---|---|--|---|---
--
--
--
--
--	---	--
---		
DNA polymerase (Cop-E9L)	E9L	CPXV075
   
   
   | 048 3018  
   
   
   | (-)   | 99.502   | NoF2-071 69509 72526   
   
  | 3018 (-)   
  | 99.80  | NoH1-070  
   
   | 69467 72484   | 3018  
  | (-)   | 99.801  | weH1-070 68783 71800 3018  
   | (-)   
  | 99.602   
   | SweH2-070   
   | 68633  | 71650  | 3018  
  | (-)  | 99.602  |
| Sulfhydryl oxidase (FAD-linked) (Cop-E10R)   | E10R  | CPXV076  | NoF1-072 72080 72  
   
   
   | 367 288   
   
   
   | (+)   | 98.947   | NoF2-072 72558 72845   
   
  | 288 (+)  
  | 97.89  | NoH1-071  
   
   | 72516 72803   | 288   
  | (+)   | 97.895  | SweH1-071 71832 72119 288  
   | (+)   
  | 97.895   
   | SweH2-071   
   | 71682  | 71969  | 288   
  | (+)  | 97.895  |
| Virion core protein (Con-E11L)   | E11L  | CPXV077  | NoF1-073 72362 7   
   
   
   | 751 390   
   
   
   | (-)   | 99.225   | NoF2-073 72840 73229   
   
  | 390 (-)  
  | 99.22  | NoH1-072  
   
   | 72798 73187   | 390   
  | (-)   | 99.225  | SweH1-072 72114 72503 390  
   | (-)   
  | 99.225   
   | SweH2-072   
   | 71964  | 72353  | 390   
  | (-)  | 99.225  |
| Membrane protein (Cop-O1L)   | OIL   | CPXV078  | NoF1-074 72738 74  
   
   
   | 738 2001  
   
   
   | (-)   | 98,498   | NoF2-074 73216 75216   
   
  | 2001 (-)   
  | 98,79  | NoH1-073  
   
   | 73174 75174   | 2001  
  | (-)   | 98,799  | SweH1-073 72490 74490 2001   
   | (-)   
  | 98,498   
   | SweH2-073   
   | 72340  | 74340  | 2001  
  | (-)  | 98,498  |
| Glutaredoxin 1 (Cop-O2L)   | O2L   | CPXV079  | NoF1-075 74786 7   
   
   
   | 112 327   
   
   
   | (-)   | 98.148   | NoF2-075 75264 75590   
   
  | 327 (-)  
  | 98,14  | 8 NoH1-074  
   
   | 75222 75548   | 327   
  | (-)   | 98,148  | SweH1-074 74537 74863 327  
   | (-)   
  | 98,148   
   | SweH2-074   
   | 74387  | 74713  | 327   
  | (-)  | 98.148  |
| Virus entryflusion complex component (Con-O3L)   | 031   |  | NoF1-076 75136 7   
   
   
   | 243 108   
   
   
   | 6   |  | NoE2-076 75614 75721   
   
  | 108 (-)  
  |  | NoH1-075  
   
   | 75572 75679   | 108   
  | 6   |   | sweH1.075 74887 74994 108  
   | 6   
  |  
   | SweH2.075   
   | 74737  | 74844  | 108   
  | 6  |   |
| DNA-binding core protein (Con-III.)  | IIL   | CPXV080  | NoF1-077 75258 7   
   
   
   | 196 939   
   
   
   | 6   | 100  | NoF2-077 75736 76674   
   
  | 939 (-)  
  | 100  | NoH1-076  
   
   | 75694 76632   | 939   
  | 6   | 100   | SweH1-076 75009 75947 939  
   | 0   
  | 99 359   
   | SweH2.076   
   | 74859  | 75797  | 939   
  | 6  | 99.038  |
| INV membrone protein (Cop.12)  | 121   | CPXV081  | NoE1 078 76203 7   
   
   
   | 124 222   
   
   
   | 0   | 08.63  | NoF2 078 76681 76002   
   
  | 222 ()   
  | 98.63  | NoH1 077  
   
   | 76630 76860   | 222   
  | 0   | 08.63   | Small1 077 75054 76175 222   
   | 0   
  | 07.26  
   | Small2 077  
   | 75804  | 76025  | 222   
  | 0  | 97.26   |
| os DVA kindina ubeenkonmetein (Con 121.)   | 121   | CRVU001  | NoF1 070 76425 7   
   
   
   | 124 212   
   
   
   | ()  | 08.141   | NoF2-070 76002 77712   
   
  | 810 ()   
  | 08.14  | NoH1 079  
   
   | 76037 10300   | 810   
  | (-)   | 08.141  | Smelli 079 74174 74095 910   
   | 0   
  | 08 512   
   | Swell2-077  
   | 76036  | 76025  | 210   
  | 0  | 08.141  |
| Dihomolootide undustase Jama submit (Con III.)   | 141   | CDVU002  | NoE1 090 77217 7   
   
   
   | 620 2216  
   
   
   | ()  | 00.194   | NoF2-077 70705 71112<br>NoF2-080 77705 80110   
   
  | 2216 ()  
  | 08.21  | NoH1 070  
   
   | 77752 00020   | 2216  
  | ()  | 08 214  | 2maH1 070 77068 70282 2216   
   | 0   
  | 08 572   
   | Swc12-078   
   | 76016  | 20221  | 2216  
  | 0  | 08 702  |
| Rionacteorae realizes ange submit (Cop14L)   | 14L   | CIAVOS   | NOF1-080 77317 7   
   
   
   | 2310  
   
   
   | (-)   | 70.104   | N0F2-080 77793 80110   
   
  | 2310 (-)   
  | 96.31  | NOH1-0/9  
   
   | 11133 80008   | 2510  
  | (-)   | 70.314  | Swerii-0/9 7/008 79383 2310  
   | (-)   
  | 96,313   
   | 3wcri2-0/9  
   | 70910  | 79231  | 2310  
  | (-)  | 98.703  |
| IM v protein vP13 (Cop-ISL)  | ISL   | CPXV084  | NoF1-081 /9659 /   
   
   
   | 898 240   
   
   
   | (-)   | 100  | NoF2-081 80137 80376   
   
  | 240 (-)  
  | 100  | NoH1-080  
   
   | 80095 80334   | 240   
  | (-)   | 100   | sweH1-080 /9410 /9649 240  
   | (-)   
  | 100  
   | SweH2-080   
   | 79258  | /949/  | 240   
  | (-)  | 100   |
| Telomere-binding protein (Cop-16L)   | 16L   | CPXV085  | NoF1-082 /991/ 8   
   
   
   | 065 1149  
   
   
   | (-)   | 99.476   | NoF2-082 80395 81543   
   
  | 1149 (-)   
  | 99.47  | NoH1-081  
   
   | 80353 81501   | 1149  
  | (-)   | 99.476  | weH1-081 /9668 80816 1149  
   | (-)   
  | 99.215   
   | SweH2-081   
   | /9516  | 80664  | 1149  
  | (-)  | 99.215  |
| Virion core cysteine protease (Cop-I7L)  | 17L   | CPXV086  | NoF1-083 81058 8.  
   
   
   | 529 1272  
   
   
   | (-)   | 99.291   | NoF2-083 81536 82807   
   
  | 1272 (-)   
  | 99.29  | NoH1-082  
   
   | 81494 82765   | 1272  
  | (-)   | 99.291  | SweH1-082 80809 82080 1272   
   | (-)   
  | 99.291   
   | SweH2-082   
   | 80657  | 81928  | 1272  
  | (-)  | 99.291  |
| RNA helicase, DExH-NPH-II domain (Cop-I8R)   | ISR   | CPXV087  | NoF1-084 82335 84  
   
   
   | 365 2031  
   
   
   | (+)   | 99.26  | NoF2-084 82813 84843   
   
  | 2031 (+)   
  | 99.26  | NoH1-083  
   
   | 82771 84801   | 2031  
  | (+)   | 99.26   | SweH1-083 82086 84116 2031   
   | (+)   
  | 99.26  
   | SweH2-083   
   | 81934  | 83964  | 2031  
  | (+)  | 99.408  |
| Metalloprotease (Cop-G1L)  | GIL   | CPXV088  | NoF1-085 84369 8   
   
   
   | 144 1776  
   
   
   | (-)   | 99.662   | NoF2-085 84847 86622   
   
  | 1776 (-)   
  | 99.66  | NoH1-084  
   
   | 84805 86580   | 1776  
  | (-)   | 99.662  | weH1-084 84120 85895 1776  
   | (-)   
  | 99.662   
   | SweH2-084   
   | 83968  | 85743  | 1776  
  | (-)  | 99.662  |
| Entry fusion complex component (Cop-G3L)   | G3L   | CPXV089  | NoF1-086 86141 8   
   
   
   | 476 336   
   
   
   | (-)   | 99.099   | NoF2-086 86619 86954   
   
  | 336 (-)  
  | 99.09  | NoH1-085  
   
   | 86577 86912   | 336   
  | (-)   | 99.099  | weH1-085 85892 86227 336   
   | (-)   
  | 99.099   
   | SweH2-085   
   | 85740  | 86075  | 336   
  | (-)  | 99.099  |
| VLTF (late transcription elongation factor) (Co p-G2R)   | G2R   | CPXV090  | NoF1-087 86470 8   
   
   
   | 132 663   
   
   
   | (+)   | 98.636   | NoF2-087 86948 87610   
   
  | 663 (+)  
  | 98.63  | 6 NoH1-086  
   
   | 86906 87568   | 663   
  | (+)   | 98.636  | weH1-086 86221 86883 663   
   | (+)   
  | 99.091   
   | SweH2-086   
   | 86069  | 86731  | 663   
  | (+)  | 99.091  |
| Glutaredoxin-like protein (Cop-G4L)  | G4L   | CPXV091  | NoF1-088 87102 87  
   
   
   | 476 375   
   
   
   | (-)   | 99.194   | NoF2-088 87580 87954   
   
  | 375 (-)  
  | 99.19  | NoH1-087  
   
   | 87538 87912   | 375   
  | (-)   | 99.194  | SweH1-087 86853 87227 375  
   | (-)   
  | 98.387   
   | SweH2-087   
   | 86701  | 87075  | 375   
  | (-)  | 98.387  |
| FEN1-like nuclease (Cop-G5R)   | G5R   | CPXV092  | NoF1-089 87479 8   
   
   
   | 786 1308  
   
   
   | (+)   | 97.931   | NoF2-089 87957 89264   
   
  | 1308 (+)   
  | 97.93  | NoH1-088  
   
   | 87915 89222   | 1308  
  | (+)   | 97.931  | SweH1-088 87230 88534 1305   
   | (+)   
  | 98.848   
   | SweH2-088   
   | 87078  | 88382  | 1305  
  | (+)  | 98.848  |
| RNA polymerase subunit (RPO7) (Cop-G5.5R)  | G5.5R   | CPXV093  | NoF1-090 88794 8   
   
   
   | 985 192   
   
   
   | (+)   | 100  | NoF2-090 89272 89463   
   
  | 192 (+)  
  | 100  | NoH1-089  
   
   | 89230 89421   | 192   
  | (+)   | 100   | SweH1-089 88542 88733 192  
   | (+)   
  | 100  
   | SweH2-089   
   | 88390  | 88581  | 192   
  | (+)  | 100   |
| NLPcP60 superfamily protein (Cop-G6R)  | G6R   | CPXV094  | NoF1-091 88987 8   
   
   
   | 484 498   
   
   
   | (+)   | 97.576   | NoF2-091 89465 89962   
   
  | 498 (+)  
  | 97.57  | 6 NoH1-090  
   
   | 89423 89920   | 498   
  | (+)   | 97.576  | weH1-090 88735 89232 498   
   | (+)   
  | 97.576   
   | SweH2-090   
   | 88583  | 89080  | 498   
  | (+)  | 97.576  |
| Virion phosphoprotein, early morphogenesis (Cop -G7L)  | G7L   | CPXV095  | NoF1-092 89449 9   
   
   
   | 564 1116  
   
   
   | (-)   | 99.191   | NoF2-092 89927 91042   
   
  | 1116 (-)   
  | 99,19  | NoH1-091  
   
   | 89885 91000   | 1116  
  | (-)   | 99,191  | SweH1-091 89197 90312 1116   
   | (-)   
  | 100  
   | SweH2-091   
   | 89045  | 90160  | 1116  
  | (-)  | 100   |
| CC Cop-G ORF B   |   | CPXV096  | overlap  
   
   
   |   
   
   
   | 0   |  |  
   
  |  
  |  |   
   
   |   |   
  |   |   |  
   |   
  |  
   |   
   |  |  |   
  |  |   |
| VLTF-1 (late transcription factor 1) (Con-G8R)   | G8R   | CPXV097  | NoE1-093 90595 9   
   
   
   | 377 783   
   
   
   | (+)   | 99.615   | NoF2-093 91073 91855   
   
  | 783 (+)  
  | 99.61  | NoH1-092  
   
   | 91031 91813   | 783   
  | (+)   | 99.615  | weH1-092 90343 91125 783   
   | (+)   
  | 99.615   
   | SweH2-092   
   | 90191  | 90973  | 783   
  | (+)  | 99.615  |
| Entrylfixian complex component myristylmytein (Can-G9R)  | GOR   | CPXV098  | NoF1-094 91397 9   
   
   
   | 419 1023  
   
   
   | (+)   | 99.706   | NoF2-094 91875 92897   
   
  | 1023 (+)   
  | 99.70  | NoH1-092  
   
   | 91833 92855   | 1023  
  | (+)   | 99.706  | SweH1.093 91145 92167 1023   
   | (+)   
  | 99.118   
   | SweH2.093   
   | 90993  | 92015  | 1023  
  | (+)  | 99.118  |
| BMV membrone motein (Con L1D)  | U1R   | CRVU000  | NoE1 005 02420 0   
   
   
   | 122 752   
   
   
   | (1)   | 00.2   | NoF2-005 02808 02650   
   
  | 752 (+)  
  | 00.2   | NoH1 004  
   
   | 02655 02608   | 762   
  | (+)   | 00.2  | Smith 004 02168 02020 752  
   | (1)   
  | 00.2   
   | Swc12-075   
   | 02016  | 02769  | 762   
  | (1)  | 00.2  |
| INI V memorane protein (Cop-LIK)   | LIR   | CPAV099  | NoF1-095 92420 9.  
   
   
   | 172 755   
   
   
   | (+)   | 99.2   | NoF2-095 92898 93050   
   
  | 755 (+)  
  | 99.2   | NoH1-094  
   
   | 92830 93008   | 0/2   
  | (+)   | 99.2  | WeH1-094 92108 92920 755   
   | (+)   
  | 99.2   
   | SweH2-094   
   | 92010  | 92/08  | - 100   
  | (+)  | 99.2  |
| Viral memorane assembly proteins (VMAP) (Cop-L2 R)   | L2K   | CPAVIOU  | NOP1-090 93204 9.  
   
   
   | ¥/0 26/   
   
   
   | (+)   | 91.121   | N0F2-090 93082 93948   
   
  | 20/ (+)  
  | 91.12  | N0H1-095  
   
   | 93040 93900   | 20/   
  | (+)   | 91.121  | SweH1-095 92959 95225 267  
   | (+)   
  | 98.804   
   | SweH2-095   
   | 92807  | 95075  | 20/   
  | (+)  | 98.804  |
| Internal vinon protein (Cop-LSL)   | L3L   | CPXV101  | NoF1-09/ 93460 94  
   
   
   | 512 1053  
   
   
   | (-)   | 99./14   | Nol <sup>+</sup> 2-097 95958 94990   
   
  | 1053 (-)   
  | 99.42  | NoH1-096  
   
   | 95896 94948   | 1053  
  | (-)   | 99.429  | sweH1-096 93215 94249 1035   
   | (-)   
  | 97.429   
   | SweH2-096   
   | 93063  | 94115  | 1053  
  | (-)  | 99.143  |
| ss(dsDNA binding protein (VP8) (Cop-L4R)   | L4K   | CPXV102  | NoF1-098 94537 9   
   
   
   | 292 /56   
   
   
   | (+)   | 99.203   | Nol-2-098 95015 95770  
   
  | /56 (+)  
  | 99.20.   | NoH1-097  
   
   | 94973 95728   | /50   
  | (+)   | 99.203  | sweH1-097 94274 95029 756  
   | (+)   
  | 100  
   | SweH2-097   
   | 94140  | 94895  | /56   
  | (+)  | 100   |
| Entry and Fusion IM V protein (Cop-LSR)  | L5R   | CPXV103  | NoF1-099 95302 9   
   
   
   | 588 387   
   
   
   | (+)   | 98.438   | NoF2-099 95780 96166   
   
  | 387 (+)  
  | 99.21  | NoH1-098  
   
   | 95738 96124   | 387   
  | (+)   | 99.219  | SweH1-098 95039 95425 387  
   | (+)   
  | 99.219   
   | SweH2-098   
   | 94905  | 95291  | 387   
  | (+)  | 99.219  |
| Virion morph (Cop-J1R)   | J1R   | CPXV104  | NoF1-100 95645 9   
   
   
   | 106 462   
   
   
   | (+)   | 100  | NoF2-100 96123 96584   
   
  | 462 (+)  
  | 99.33  | 8 NoH1-099  
   
   | 96081 96542   | 462   
  | (+)   | 99.338  | SweH1-099 95382 95843 462  
   | (+)   
  | 100  
   | SweH2-099   
   | 95248  | 95709  | 462   
  | (+)  | 100   |
| Thymidine kinase (Cop-J2R)   | J2R   | CPXV105  | NoF1-101 96122 9   
   
   
   | 655 534   
   
   
   | (+)   | 97.74  | NoF2-101 96600 97133   
   
  | 534 (+)  
  | 98.30  | 5 NoH1-100  
   
   | 96558 97091   | 534   
  | (+)   | 98.305  | SweH1-100 95859 96392 534  
   | (+)   
  | 98.305   
   | SweH2-100   
   | 95725  | 96258  | 534   
  | (+)  | 98.305  |
| Poly (A) polymerase small subunit (VP39) (Cop-J 3R)  | J3R   | CPXV106  | NoF1-102 96723 97  
   
   
   | 724 1002  
   
   
   | (+)   | 99.7   | NoF2-102 97200 98201   
   
  | 1002 (+)   
  | 99.7   | NoH1-101  
   
   | 97158 98159   | 1002  
  | (+)   | 99.7  | SweH1-101 96459 97460 1002   
   | (+)   
  | 99.7   
   | SweH2-101   
   | 96325  | 97326  | 1002  
  | (+)  | 99.7  |
| RNA polymerase subunit (RPO22) (Cop-J4R)   | J4R   | CPXV107  | NoF1-103 97639 9   
   
   
   | 196 558   
   
   
   | (+)   | 99.459   | NoF2-103 98116 98673   
   
  | 558 (+)  
  | 98.91  | NoH1-102  
   
   | 98074 98631   | 558   
  | (+)   | 98.919  | SweH1-102 97375 97932 558  
   | (+)   
  | 100  
   | SweH2-102   
   | 97241  | 97798  | 558   
  | (+)  | 100   |
| IMV membrane protein (Cop-J5L)   | J5L   | CPXV108  | NoF1-104 98257 9   
   
   
   | 658 402   
   
   
   | (-)   | 100  | NoF2-104 98734 99135   
   
  | 402 (-)  
  | 100  | NoH1-103  
   
   | 98692 99093   | 402   
  | (-)   | 100   | SweH1-103 97987 98388 402  
   | (-)   
  | 100  
   | SweH2-103   
   | 97853  | 98254  | 402   
  | (-)  | 100   |
| RNA polymerase subunit (RPO147) (Cop-J6R)  | J6R   | CPXV109  | NoF1-105 98765 10  
   
   
   | 625 3861  
   
   
   | (+)   | 99.844   | NoF2-105 99242 103102  
   
  | 3861 (+)   
  | 99.84  | NoH1-104  
   
   | 99200 10306   | 0 3861  
  | (+)   | 99.844  | SweH1-104 98495 102355 3861  
   | (+)   
  | 99.689   
   | SweH2-104   
   | 98361  | 102221   | 3861  
  | (+)  | 99.689  |
| Tyr/Ser phosphatase, IFN-gamma inhibitor (Cop-H 1L)  | HIL   | CPXV110  | NoF1-106 102622 10   
   
   
   | 137 516   
   
   
   | (-)   | 98.83  | NoF2-106 103099 103614   
   
  | 516 (-)  
  | 98.83  | NoH1-105  
   
   | 103057 10357  | 2 516   
  | (-)   | 98.83   | weH1-105 102352 102867 516   
   | (-)   
  | 99.415   
   | SweH2-105   
   | 102218   | 102733   | 516   
  | (-)  | 99.415  |
| IMV membrane nustein (Con-H2R)   | H2R   | CPXV111  | NoE1 107 102151 10   
   
   
   | 200 670   
   
   
   | (1)   | 08.042   | N-E2 102 102/20 104102   
   
  | 570 (4)  
  | 98.94  | NoIII 106   
   
   | 103586 10415  | 5 570   
  | (+)   | 98 942  | Small1 106 102881 102450 570   
   | (4)   
  | 100  
   | Small2 106  
   | 102242   | 103316   | 570   
  | (+)  | 100   |
| La v inclusion (cop marc)  |   | CIATIN   | NOF1-10/ 105151 10   
   
   
   | 120 570   
   
   
   | (+)   | 70.742   | NOP2-107 103028 104197   
   
  | 510 (1)  
  | /0./**   | 110111-100  
   
   | 105560 10415.   |   
  |   |   | JWC111-100 102001 103400 570   
   | (+)   
  | 100  
   | 3 WC112-100   
   | 102747   | 100000   | 210   
  |  |   |
| INV henarin binding surface protein (Cop-H3L)  | H3L   | CPXV112  | NoF1-107 103131 10<br>NoF1-108 103723 10   
   
   
   | 700 978   
   
   
   | (+)   | 99,385   | NoF2-107 103628 104197<br>NoF2-108 104200 105177   
   
  | 978 (-)  
  | 99.69  | NoH1-107  
   
   | 103366 10413  | 5 978   
  | (-)   | 99.692  | SweH1-107 103452 104429 978  
   | (+)   
  | 99,385   
   | SweH2-107   
   | 102747   | 104295   | 978   
  | (-)  | 99.385  |
| INV heparin binding surface protein (Cop-H3L)<br>RAP4 (RNA nol assoc motein) (Cop-H3L)   | H3L<br>H4L  | CPXV112<br>CPXV113   | NoF1-107 103131 10<br>NoF1-108 103723 10<br>NoF1-109 104701 10   
   
   
   | 700 978<br>088 2388   
   
   
   | (+)   | 99.385<br>99.623   | NoF2-107 103628 104197<br>NoF2-108 104200 105177<br>NoF2-109 105178 107565   
   
  | 978 (-)<br>2388 (-)  
  | 99.69  | NoH1-100  
   
   | 104158 10513<br>105136 10752  | 5 978<br>3 2388   
  | (-)   | 99.692<br>99.748  | SweH1-108 102383 105450 576<br>SweH1-107 103452 104429 978<br>SweH1-108 104430 106817 2388   
   | (-)   
  | 99.385<br>99.623   
   | SweH2-108<br>SweH2-108  
   | 102747<br>103318<br>104296   | 104295   | 978   
  | (-)  | 99.385<br>99.623  |
| INT V Infantianian protein (Cop-Hill.)<br>INT V heparin binding surface protein (Cop-Hill.)<br>RAP94 (RNA pol assoc protein) (Cop-Hill.)<br>VI TE4 (Ida te transcription for for of a (Con-Hill.)  | H3L<br>H4L<br>H5R   | CPXV112<br>CPXV112<br>CPXV113<br>CPXV114   | NoF1-107 103131 10<br>NoF1-108 103723 10<br>NoF1-109 104701 10<br>NoF1-110 107274 10   
   
   
   | 700 978<br>700 978<br>088 2388<br>894 621   
   
   
   | (+)<br>(-)<br>(+)   | 99.385<br>99.623<br>93.782   | NoF2-107 103628 104197<br>NoF2-108 104200 105177<br>NoF2-109 105178 107565<br>NoF2-110 107751 108374   
   
  | 978 (-)<br>2388 (-)<br>674 (+)   
  | 99.69<br>99.74   | NoH1-100<br>NoH1-107<br>NoH1-108  
   
   | 104158 10513<br>104158 10513<br>105136 10752  | 5 978<br>3 2388<br>2 624  
  | (-)<br>(-)  | 99.692<br>99.748<br>96.135  | SweH1-108 10430 10580 10580 570<br>SweH1-107 103452 104429 978<br>SweH1-108 104430 106817 2388<br>SweH1-109 107003 107673 621  
   | (+)<br>(-)<br>(+)   
  | 99.385<br>99.623<br>98.544   
   | SweH2-107<br>SweH2-108<br>SweH2-108   
   | 102747<br>103318<br>104296<br>106869   | 104295<br>106683<br>107489   | 978<br>2388<br>621  
  | (-)<br>(-)   | 99.385<br>99.623<br>98.544  |
| NV terainmenter preserver (andre presiden (Cop-HSL)<br>RAP94 (RNA pol assoc protein) (Cop-HSL)<br>VLTF4 (lake transcription factor 4) (Cop-HSR)<br>VLTF4 (lake transcription factor 4) (Cop-HSR)   | H3L<br>H4L<br>H5R<br>H6R  | CPXV112<br>CPXV112<br>CPXV113<br>CPXV114<br>CPXV115  | NoF1-107 103131 10<br>NoF1-108 103723 10<br>NoF1-109 104701 10<br>NoF1-110 107274 10<br>NoF1-111 107895 10   
   
   
   | 700 978<br>700 978<br>088 2388<br>894 621<br>839 945  
   
   
   | (+)<br>(-)<br>(+)<br>(+)  | 99.385<br>99.623<br>93.782<br>99.682   | NoF2-107 103028 104197<br>NoF2-108 104200 105177<br>NoF2-109 105178 107565<br>NoF2-110 107751 108374<br>NoF2-111 108375 109319   
   
  | 978 (-)<br>2388 (-)<br>624 (+)<br>945 (4)  
  | 99.69<br>99.74<br>96.13  | NoH1-100           NoH1-107           NoH1-108           NoH1-109           NoH1-110  
   
   | 104158 10513<br>104158 10513<br>105136 10752<br>107709 10833<br>108333 10927  | 5 978<br>3 2388<br>2 624<br>7 945   
  | (-)<br>(-)<br>(+)<br>(+)  | 99.692<br>99.748<br>96.135<br>99.682  | weth-100         10268         105950         576           sweth-107         103452         104429         978           sweth-108         104430         106817         2388           sweth-109         107003         107623         621           sweth-1.10         107674         108568         945  
   | (+)<br>(-)<br>(+)<br>(+)  
  | 99.385<br>99.623<br>98.544<br>99.682   
   | SweH2-100<br>SweH2-107<br>SweH2-108<br>SweH2-109<br>SweH2-110   
   | 102747<br>103318<br>104296<br>106869<br>107490   | 104295<br>106683<br>107489   | 978<br>2388<br>621<br>945   
  | (-)<br>(-)<br>(+)<br>(+)   | 99.385<br>99.623<br>98.544<br>99.682  |
| VV Repath billing surface protein (Cop-HSL)<br>RAP94 (RNA) pal assoc protein (Cop-HSL)<br>WTTF-4 (late Transpir) fon Educa 7 (Lop-HSL)<br>DNA toposismerase type I (Cop-HSR)<br>WYR-1164   | H3L<br>H4L<br>H5R<br>H6R  | CPXV112<br>CPXV112<br>CPXV113<br>CPXV114<br>CPXV115<br>CPXV116   | NoF1-107 103131 10<br>NoF1-108 103723 10<br>NoF1-109 104701 10<br>NoF1-110 107274 10<br>NoF1-111 107895 10   
   
   
   | 720 570<br>700 978<br>088 2388<br>894 621<br>839 945  
   
   
   | (+)<br>(-)<br>(+)<br>(+)  | 99.385<br>99.623<br>93.782<br>99.682   | NoF2-107         103628         104197           NoF2-108         104200         105177           NoF2-109         105178         107565           NoF2-110         107751         108374           NoF2-111         108375         109319   
   
  | 978 (-)<br>978 (-)<br>2388 (-)<br>624 (+)<br>945 (+)   
  | 99.69<br>99.74<br>96.13<br>99.68   | NoH1-108<br>NoH1-108<br>NoH1-108<br>NoH1-109<br>NoH1-110  
   
   | 105368 10415<br>104158 10513<br>105136 10752<br>107709 10833<br>108333 10927  | 5 978<br>3 2388<br>2 624<br>7 945   
  | (-)<br>(-)<br>(+)<br>(+)  | 99.692<br>99.748<br>96.135<br>99.682  | wwith-100         102681         105050         576           wwith-107         103452         104429         978           sweth-108         104430         106817         2388           sweth-109         107003         107623         621           sweth-110         107624         108568         945   
   | (+)<br>(-)<br>(+)<br>(+)  
  | 99.385<br>99.623<br>98.544<br>99.682   
   | SweH2-100<br>SweH2-107<br>SweH2-108<br>SweH2-109<br>SweH2-110   
   | 102747<br>103318<br>104296<br>106869<br>107490   | 104295<br>106683<br>107489<br>108434   | 978<br>2388<br>621<br>945   
  | (-)<br>(-)<br>(+)<br>(+)   | 99.385<br>99.623<br>98.544<br>99.682  |
| VI We participations generated concerns (Cop-HSL)<br>RAP94 (RNA pol assoc protein (Cop-HSL)<br>RAP94 (RNA pol assoc protein (Cop-HSL)<br>VLTF-4 (late transcription factor 4) (Cop-HSR)<br>DNA topoisomers (pol [Cop-HSR)<br>(CPV-B-116<br>CPV-B-116   | H3L<br>H4L<br>H5R<br>H6R<br>-   | CPXV112<br>CPXV112<br>CPXV113<br>CPXV114<br>CPXV115<br>CPXV116<br>CPXV117  | NoF1-107 103131 10<br>NoF1-108 103723 10<br>NoF1-109 104701 10<br>NoF1-110 107274 10<br>NoF1-111 107895 10<br>overlap  
   
   
   | 720 570<br>700 978<br>088 2388<br>894 621<br>839 945  
   
   
   | (+)<br>(-)<br>(+)<br>(+)<br>(+)   | 99.3942<br>99.385<br>99.623<br>93.782<br>99.682  | N0F2-107         103528         104197           NoF2-108         104200         105177           NoF2-109         105178         107565           NoF2-110         107751         108374           NoF2-111         108375         109319   
   
  | 978 (·)<br>2388 (·)<br>624 (+)<br>945 (+)<br>441 (+)   
  | 99.69<br>99.74<br>96.13<br>99.68   | NoH1-100<br>NoH1-107<br>NoH1-108<br>NoH1-109<br>NoH1-110  
   
   | 104158 10415<br>105136 10752<br>107709 10833<br>108333 10927  | 5 978<br>3 2388<br>2 624<br>7 945   
  | (-)<br>(-)<br>(+)<br>(+)  | 99.692<br>99.748<br>96.135<br>99.682  | well1-010102801 [10560 976<br>well1-01010430 106807 2388<br>well1-01010430 106817 2388<br>well1-1010107624 108568 945<br>well1-110107624 108568 945  
   | (+)<br>(-)<br>(+)<br>(+)<br>(+)   
  | 99.385<br>99.623<br>98.544<br>99.682   
   | SweH2-100<br>SweH2-107<br>SweH2-108<br>SweH2-109<br>SweH2-110   
   | 102/47<br>103318<br>104296<br>106869<br>107490   | 104295<br>106683<br>107489<br>108434   | 978<br>2388<br>621<br>945   
  | (-)<br>(-)<br>(+)<br>(+)   | 99.385<br>99.623<br>98.544<br>99.682  |
| IVV hepathiologies and the second se  | H3R<br>H4L<br>H5R<br>H6R<br>-<br>H7R<br>DIR   | CPXV112<br>CPXV112<br>CPXV113<br>CPXV114<br>CPXV115<br>CPXV115<br>CPXV116<br>CPXV117   | NoF1-107         105133         10           NoF1-108         103723         10           NoF1-109         104701         10           NoF1-110         107274         10           NoF1-111         107895         10           overlap         NoF1-112         108877         10           NoF1-112         109361         11         20361         11   
   
   
  | 720 370<br>700 978<br>088 2388<br>894 621<br>839 945<br>317 441<br>805 2525  
   
  | (+)<br>(-)<br>(+)<br>(+)<br>(+)   | 98.63<br>99.626<br>99.623<br>99.682  
   | NoF2-107         10362.8         104197           NoF2-108         104200         105177           NoF2-109         105178         107565           NoF2-110         107751         108374           NoF2-111         108375         109319           NoF2-112         109357         109797           NoF2-113         109040         112325   
   
   | 318         (+)           978         (-)           2388         (-)           624         (+)           945         (+)           441         (+)           2555         (+)   
   | 99.69<br>99.74<br>96.13<br>99.68<br>97.94  | NoH1-100 NoH1-107 NoH1-108 NoH1-109 NoH1-110 NoH1-110 NoH1-111   
   
  | 104158 10513<br>104158 10513<br>105136 10752<br>107709 10833<br>108333 10927<br>109315 109755   | 5 978<br>3 2388<br>2 624<br>7 945<br>5 441<br>2 2525   | (-)<br>(-)<br>(+)<br>(+)<br>(+)   | 99.692<br>99.748<br>96.135<br>99.682<br>97.945<br>97.945  
   | WHI-108 102381 103452 10429 978<br>SweH1-107 103452 10429 978<br>SweH1-108 104430 106817 2388<br>SweH1-109 107003 107623 621<br>SweH1-110 107624 108568 945<br>SweH1-111 108606 109046 4441<br>SweH1-110 100090 114622 225  
  | (+)<br>(-)<br>(+)<br>(+)<br>(+)  
   | 99.385<br>99.623<br>98.544<br>99.682<br>97.945<br>00.380  
  | SweH2-100<br>SweH2-107<br>SweH2-108<br>SweH2-109<br>SweH2-110<br>SweH2-111   
  | 102/47<br>103318<br>104296<br>106869<br>107490<br>108472   | 104295<br>106683<br>107489<br>108434<br>108912   | 978<br>978<br>2388<br>621<br>945<br>441<br>2525  | (-)<br>(-)<br>(+)<br>(+)<br>(+)   
  | 99.385<br>99.623<br>98.544<br>99.682<br>97.945<br>00.380  |
| VI We partia billing surface protein (Cop-BBL) RAP4 (RN Ap al assoc protein (Cop-BBL) RAP4 (RN Ap al assoc protein (Cop-BBL) UTF-4 that transpringtion Inter 4-1 (Cop-BBR) DNA topoisomerase type 1 (Cop-BBR) (CPV-8-1-16 (VTA) membrane assembly proteins (VMAP) (Cop-BT R) aRNA capping cam me large submit (Cop-DBR)  | HAL<br>H4L<br>H5R<br>H6R<br>-<br>H7R<br>D1R<br>D1R  | CPXVII2<br>CPXVI13<br>CPXVI13<br>CPXVI14<br>CPXVI15<br>CPXVI16<br>CPXVI16<br>CPXVI17<br>CPXVI18  | NoF1-107         105131         10           NoF1-108         103723         10           NoF1-109         104701         10           NoF1-110         107274         10           NoF1-111         107895         10           overlap         NoF1-112         108877         10           NoF1-113         109361         11         NoF1-113         109361   
   
   
   | 720 370<br>700 978<br>088 2388<br>894 621<br>839 945<br>317 441<br>895 2535   
   
   
   | (+)<br>(-)<br>(+)<br>(+)<br>(+)<br>(+)  | 99.385<br>99.623<br>93.782<br>99.682<br>98.63<br>99.526  | Nor2-107         103823         104137           Nor2-108         104200         105177           Nor2-109         105178         107563           Nor2-110         107571         108375           Nor2-111         108375         109319           Nor2-112         109357         109797           Nor2-113         109841         112375   
   
  | 318         (+)           978         (-)           2388         (-)           624         (+)           945         (+)           441         (+)           2535         (+)  
  | 99.69<br>99.74<br>96.13<br>99.68<br>99.68<br>97.94<br>97.94  | NoH1-100 NoH1-107 NoH1-108 NoH1-109 NoH1-110 NoH1-110 NoH1-111 NoH1-112 NoH1-112 NoH1-112   
   
   | 104158 10513<br>104158 10513<br>105136 10752<br>107709 10833<br>108333 10927<br>109315 10975<br>109315 10975  | 5 978<br>3 2388<br>2 624<br>7 945<br>5 441<br>3 2535  
  | (-)<br>(-)<br>(+)<br>(+)<br>(+)<br>(+)  | 99.692<br>99.748<br>96.135<br>99.682<br>97.945<br>99.408  | well1-101 (03452 104429 978<br>well1-101 (03452 104429 978<br>well1-108 104430 106817 2388<br>well1-109 (07003 107623 621<br>well1-110 (07624 108568 945<br>well1-111 (08666 109046 441<br>well1-112 (109089 111623 2535<br>well1-112 (109089 111623 2535<br>well1-112 (109089 111623 2535<br>well1-112 (109089 111623 2535)   
   | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  
  | 99.385<br>99.623<br>98.544<br>99.682<br>97.945<br>99.289   
   | SweH2-100<br>SweH2-107<br>SweH2-108<br>SweH2-109<br>SweH2-110<br>SweH2-111<br>SweH2-111   
   | 102/47<br>103318<br>104296<br>106869<br>107490<br>108472<br>108472<br>108955   | 104295<br>106683<br>107489<br>108434<br>108912<br>111489   | 978<br>978<br>2388<br>621<br>945<br>441<br>2535<br>441  
  | (-)<br>(-)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  | 99.385<br>99.623<br>98.544<br>99.682<br>97.945<br>99.289  |
| INV hepath billing surface protein (Cop-HSL)           RAP4 (RN) pal assoc protein (Cop-HSL)           RAP4 (RN) pal assoc protein (Cop-HSL)           DNA toposisemerase type I (Cop-HSR)           CYP-8-116           O'Y-8-116           Mina cone (Cop-DIR)           Viral methane assembly proteins (VMAP) (Cop-HR)           Mina cone (Cop-DIR)           Virian cone (Cop-DIL)   | HNL<br>HAL<br>HSR<br>HSR<br>HGR<br>HTR<br>DIR<br>DIR<br>D2L<br>D2L  | CPXVI12<br>CPXVI13<br>CPXVI13<br>CPXVI14<br>CPXVI15<br>CPXVI16<br>CPXVI16<br>CPXVI17<br>CPXVI18<br>CPXVI19   | NoF1-107         103151         II           NoF1-108         103723         II           NoF1-109         104701         II           NoF1-110         107274         II           NoF1-111         107895         II           NoF1-112         108877         II           NoF1-113         109361         II           NoF1-14         111854         II   
   
   
   | 720         370           7700         978           780         978           889         2388           894         621           839         945           317         441           895         2535           294         441           990         314  
   
   
   | (+)<br>(-)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(-)   | 98.542<br>99.385<br>99.623<br>93.782<br>99.682<br>98.63<br>99.526<br>99.526<br>99.515  | Nor2-107         103825         104137           Nor2-108         104030         105178         107565           Nor2-110         107751         108374         Nor565           Nor2-111         108375         109797         Nor92-111         108375           Nor2-112         109357         109797         Nor92-112         10357         109797           Nor2-114         112334         112774         Nor92-114         112376         103776  
   
  | 978 (-)<br>978 (-)<br>2388 (-)<br>624 (+)<br>945 (+)<br>441 (+)<br>2535 (+)<br>441 (-)<br>214 (-)  
  | 99.69<br>99.74<br>96.13<br>99.68<br>97.94<br>99.68<br>97.94<br>99.40   | NoH1-100<br>NoH1-107<br>NoH1-108<br>NoH1-109<br>NoH1-110<br>NoH1-111<br>NoH1-112<br>NoH1-112  
   
   | 104158 10513:<br>105136 10752<br>107709 10833<br>108333 10927<br>109315 10975<br>109799 11233<br>112292 11273   | 5 978<br>3 2388<br>2 624<br>7 945<br>5 441<br>3 2535<br>2 441<br>8 714  
  | (-)<br>(-)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(-)  | 99.692<br>99.748<br>96.135<br>99.682<br>97.945<br>99.408<br>99.315  | ww11-108         100452         100452         978           sweH1-108         100452         10429         978           sweH1-108         100452         10817         2388           sweH1-108         107063         107663         621           sweH1-110         107664         108568         945           sweH1-111         108666         109046         441           sweH1-112         1009089         11162         2535           sweH1-112         11582         112022         441  
   | (+)<br>(-)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(-)   
  | 99.385<br>99.623<br>98.544<br>99.682<br>97.945<br>99.289<br>99.315   
   | SweH2-100<br>SweH2-107<br>SweH2-108<br>SweH2-109<br>SweH2-110<br>SweH2-111<br>SweH2-111<br>SweH2-112<br>SweH2-113   
   | 102747<br>103318<br>104296<br>106869<br>107490<br>108472<br>108955<br>111448   | 104295<br>106683<br>107489<br>108434<br>108912<br>111489<br>111888   | 978<br>978<br>2388<br>621<br>945<br>441<br>2535<br>441<br>214   
  | (-)<br>(-)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)   | 99.385<br>99.623<br>98.544<br>99.682<br>97.945<br>99.289<br>99.315  |
| VI V Repath billing surface protein (Cop-HSL)<br>RAP94 (RNA) pal assoc protein (Cop-HSL)<br>VITF-4 that transport (Cop-HSL)<br>DNA topolsomerase type I (Cop-HSR)<br>CPV-8-116<br>(PV-8-116<br>(PV-8-116<br>(PV-8-116<br>(PV-8-116<br>(PV-8-116<br>(PV-8-116)<br>(PV-8-116<br>(PV-8-116)<br>(PV-8-116<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>(PV-8-116)<br>( | HIL<br>H4L<br>H5R<br>H6R<br>H7R<br>D1R<br>D2L<br>D3R<br>D3R   | CPXVII2<br>CPXVII2<br>CPXVII3<br>CPXVII3<br>CPXVII5<br>CPXVII6<br>CPXVI16<br>CPXVI16<br>CPXVI18<br>CPXVI18<br>CPXVI19<br>CPXVI20   | NoF1-10         103131           NoF1-10         103723           NoF1-109         104701           NoF1-109         104701           NoF1-110         107274           NoF1-111         107295           overhp         NoF1-112           NoF1-112         108877           NoF1-113         103361           NoF1-114         111854           NoF1-115         1122871           NoF1-115         1028871  
   
   
   | 370         370           978         978           008         2388           8894         621           8899         945           317         441           895         2535           294         441           007         714   
   
   
   | (+)<br>(-)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(-)<br>(+)  | 98.542<br>99.385<br>99.623<br>93.782<br>99.682<br>98.63<br>99.526<br>99.315<br>99.156  | NoF2-101 105028 [00197]<br>NoF2-108 104200 105177<br>NoF2-109 105178 107565<br>NoF2-101 107571 108374<br>NoF2-111 108375 109319<br>NoF2-112 109357 109797<br>NoF2-113 109841 112375<br>NoF2-114 112334 112774<br>NoF2-115 112767 1113480   
   
  | 3/10         (+)           978         (-)           2388         (-)           624         (+)           945         (+)           441         (+)           2535         (+)           441         (-)           714         (+)   
  | 99.69<br>99.74<br>96.13<br>99.68<br>97.94<br>99.40<br>99.40<br>99.31<br>99.15  | NoH1-100           NoH1-107           8         NoH1-108           5         NoH1-109           2         NoH1-110           5         NoH1-111           8         NoH1-112           5         NoH1-113           5         NoH1-114  
   
   | 104158 10513:<br>105136 10752<br>107709 10833<br>108333 10927<br>109315 10975<br>109799 11233<br>112292 11233<br>112292 11343   | 5 978<br>3 2388<br>2 624<br>7 945<br>5 441<br>3 2535<br>5 441<br>3 2535<br>2 441<br>8 714<br>8 714  
  | (-)<br>(-)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(-)<br>(+)  | 99.692<br>99.748<br>96.135<br>99.682<br>97.945<br>99.408<br>99.315<br>99.156  | will is 00.001         10000         3/0           will is 01.001         100420         3/0           swell is 01.001         100430         106817         2388           well is 01.001         107003         107023         621           well is 01.001         106806         109656         945           well is 01.001         106806         10966         441           well is 01.001         110623         2355         well is 01.002         441           well is 01.001         11022         2355         well is 01.002         141           well is 01.001         11022         871         714         1122   
   | (+)<br>(-)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(-)<br>(-)<br>(+)  
  | 99.385<br>99.623<br>98.544<br>99.682<br>97.945<br>99.289<br>99.315<br>99.156   
   | SweH2-100<br>SweH2-107<br>SweH2-108<br>SweH2-109<br>SweH2-110<br>SweH2-111<br>SweH2-111<br>SweH2-113<br>SweH2-114   
   | 102747<br>103318<br>104296<br>106869<br>107490<br>108472<br>108955<br>111448<br>111881   | 104295<br>106683<br>107489<br>108434<br>108912<br>111489<br>111888<br>112594   | 978<br>978<br>2388<br>621<br>945<br>441<br>2535<br>441<br>714   
  | (-)<br>(-)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(-)<br>(-)  | 99.385<br>99.623<br>98.544<br>99.682<br>97.945<br>99.289<br>99.315<br>99.156  |
| INV hepathibiding surface protein (Cop-HSL)           RAP4 (RNA pd assoc protein (Cop-HSL)           RAP4 (RNA pd assoc protein (Cop-HSL)           DNA toposisemerase type I (Cop-HSR)           CV7-8-116           VirV8-116           MRA copies grower have type I (Cop-HSR)           CV7-8-116           Wiral newthane assembly proteins (VMAP) (Cop-HT R)           MRA copies grower have showed in (Cop-DIR)           Wiran core (Cop-DSL)           Virin core (Cop-DSR)           Linch-BVA given yies, DNA polymerase processi vity factor (Cop-D4R)  | HIL<br>H4L<br>H5R<br>H6R<br>·<br>H7R<br>D1R<br>D2L<br>D3R<br>D4R<br>D4R   | CPXVI12<br>CPXVI12<br>CPXVI13<br>CPXVI14<br>CPXVI15<br>CPXVI16<br>CPXVI16<br>CPXVI16<br>CPXVI17<br>CPXVI19<br>CPXVI20<br>CPXVI20   | NoF1-107         103151         10           NoF1-108         103723         10           NoF1-109         104701         10           NoF1-110         10723         10           NoF1-110         10723         10           NoF1-111         107274         10           NoF1-111         107895         10           overlap         NoF1-112         108877         10           NoF1-113         109361         11         NoF1-114         111854           NoF1-114         111854         11         NoF1-115         112287         11           NoF1-115         112287         11         NoF1-116         113000         11   
   
   
   | 720 370<br>700 978<br>894 621<br>839 945<br>317 441<br>895 2535<br>294 441<br>000 714<br>656 657<br>245 256   
   
   
   | (+)<br>(-)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+   | 98.542<br>99.385<br>99.623<br>93.782<br>99.682<br>98.63<br>99.526<br>99.315<br>99.156<br>98.165  | NoF2-101         105828         108137           NoF2-109         105178         107565           NoF2-101         1075178         107351           NoF2-111         108374         109319           NoF2-112         109357         109737           NoF2-113         109841         112375           NoF2-114         12334         112744           NoF2-115         112767         113480           NoF2-116         113480         141254   
   
  | 3/10         (+)           978         (-)           2388         (-)           624         (+)           945         (+)           441         (+)           2535         (+)           441         (-)           714         (+)           657         (+)   
  | 99.69<br>99.74<br>96.13<br>99.68<br>97.94<br>99.40<br>99.31<br>99.15<br>99.15<br>98.16   | NoHI-100<br>NoHI-107<br>NoHI-108<br>NoHI-108<br>NoHI-109<br>NoHI-110<br>NoHI-110<br>NoHI-111<br>NoHI-112<br>NoHI-113<br>NoHI-114<br>NoHI-115  
   
   | 104158         10415           104158         10513           105136         10752           10709         10833           108333         10927           109315         10975           109799         11233           112292         11273           112425         113438           113438         11409   | 5 978<br>3 2388<br>2 624<br>7 945<br>5 441<br>3 2535<br>2 441<br>3 2535<br>2 441<br>8 714<br>4 657<br>2 225   
  | (-)<br>(-)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)   | 99.692<br>99.748<br>96.135<br>99.682<br>97.945<br>99.408<br>99.315<br>99.156<br>98.165  | well 1:0         10:05:0         3/0           well 1:0         10:05:0         10:04:0         9/0           well 1:0         10:05:0         10:04:0         9/0           well 1:0         10:05:0         10:05:0         2:88           well 1:0         10:05:0         10:05:0         6:21           well 1:0         10:05:0         10:06:0         441           well 1:1         10:05:0         11:02         2:33           well 1:1         11:05:0         11:02:2         2:34           well 1:1         11:05:1         11:27:2         11:4           well 1:1         11:05:2         11:27:2         441           well 1:1         11:27:2         11:384         657   
   | (+)<br>(-)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)   
  | 99.385<br>99.623<br>98.544<br>99.682<br>97.945<br>99.289<br>99.315<br>99.156<br>97.706   
   | SweH2-100<br>SweH2-107<br>SweH2-108<br>SweH2-109<br>SweH2-110<br>SweH2-111<br>SweH2-111<br>SweH2-113<br>SweH2-114<br>SweH2-114<br>SweH2-115   
   | 102747<br>103318<br>104296<br>106869<br>107490<br>108472<br>108955<br>111448<br>111881<br>112594   | 104295<br>106683<br>107489<br>108434<br>108912<br>111489<br>111888<br>112594<br>113250   | 978<br>2388<br>621<br>945<br>441<br>2535<br>441<br>714<br>657<br>2350   
  | (-)<br>(-)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  | 99.385<br>99.623<br>98.544<br>99.682<br>97.945<br>99.289<br>99.315<br>99.156<br>97.706  |
| INV hepath bilding surface protein (Cop-HSL)<br>RAP94 (RNA pal assoc protein (Cop-HSL)<br>RAP94 (RNA pal assoc protein (Cop-HSL)<br>UTF-4 (late transpir) fon factor 47 (Cop-HSR)<br>DNA toposisonerase type 1/Cop-HSR)<br>CPV-B-116<br>CPV-B-116<br>MRNA capting enzyme large subuit (Cop-DTR)<br>MRNA capting enzyme large subuit (Cop-DTR)<br>Writin cure (Cop-DSR)<br>Urined-DNA glycosylane, DNA polymerase processi vity factor (Cop-D4R)<br>MTrase, DNA primuse (Cop-D5R)   | HIL<br>H4L<br>H5R<br>H6R<br>D1R<br>D1R<br>D2L<br>D3R<br>D4R<br>D5R  | CPXVII2<br>CPXVII2<br>CPXVII3<br>CPXVII4<br>CPXVII5<br>CPXVI16<br>CPXVI16<br>CPXVI17<br>CPXVI19<br>CPXV120<br>CPXV121<br>CPXV122   | NoF1-10         103723         10           NoF1-10         103723         10           NoF1-10         103723         10           NoF1-10         103723         10           NoF1-10         10723         10           NoF1-110         10724         10           NoF1-111         107895         10           NoF1-112         108877         10           NoF1-113         109361         11           NoF1-114         11884         11           NoF1-115         112287         11           NoF1-116         113000         11           NoF1-117         113688         11   
   
   
   | 7/20         570           7700         978           8088         2388           894         621           839         945           317         441           895         2535           294         441           000         714           656         657           045         2358   
   
   
   | (+)<br>(-)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+   | 98.542<br>99.385<br>99.623<br>93.782<br>99.682<br>98.63<br>99.526<br>99.315<br>99.156<br>98.165<br>98.599  | NoF2-101         1036240         1041571           NoF2-108         105175         107565           NoF2-101         107518         107565           NoF2-102         105175         103747           NoF2-110         107511         10375           NoF2-111         108375         109941           NoF2-114         12334         112774           NoF2-115         112761         113480           NoF2-115         112761         113480           NoF2-117         14168         116355   
   
  | 250         (*)           978         (·)           2388         (·)           624         (+)           945         (+)           441         (+)           2535         (+)           441         (-)           714         (+)           255         (+)           441         (+)           714         (+)           2358         (+)   
  | 99.69<br>99.74<br>96.13<br>99.68<br>97.94<br>99.68<br>97.94<br>99.40<br>99.31<br>99.15<br>99.15<br>98.16<br>98.59  | NoHI-100           NoHI-107           NoHI-108           NoHI-109           NoHI-109           NoHI-110           NoHI-110           S           NoHI-111           S           NoHI-111           S           NoHI-111           S           NoHI-113           S           NoHI-114           NoHI-115           NoHI-116   
   
   | 104158         10415           104158         10513           105136         10752           10709         108333           109315         10975           109315         10975           10292         11233           112292         11273           113438         11409           114126         11648  | 5         978           3         2388           2         624           7         945           5         441           3         2535           2         441           8         714           4         657           3         2358  
  | (-)<br>(-)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)   | 99.692<br>99.748<br>96.135<br>99.682<br>97.945<br>99.408<br>99.315<br>99.156<br>98.165<br>98.599  | well 1:0         01342         0425         976           well 1:0         01342         0425         978           well 1:0         01342         010723         218           well 1:0         0107623         0110723         621           well 1:10         0107624         0110723         621           well 1:10         0107624         0110723         621           well 1:11         0107624         11024         945           well 1:11         0107624         11022         411           well 1:11         0107624         11022         411           well 1:11         11022         111022         714           well 1:11         11022         111324         627           well 1:11         111228         111324         627           well 1:11         111272         11334         657  
   | (+)<br>(-)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+   
  | 99.385<br>99.623<br>98.544<br>99.682<br>97.945<br>99.289<br>99.315<br>99.156<br>97.706<br>99.236   
   | SweH2-107<br>SweH2-107<br>SweH2-108<br>SweH2-108<br>SweH2-109<br>SweH2-110<br>SweH2-111<br>SweH2-112<br>SweH2-113<br>SweH2-114<br>SweH2-115<br>SweH2-116  
   | 102747<br>103318<br>104296<br>106869<br>107490<br>108472<br>108955<br>111448<br>111881<br>112594<br>113282   | 104295<br>104295<br>106683<br>107489<br>108434<br>108912<br>111489<br>111888<br>112594<br>113250<br>115639   | 978<br>978<br>2388<br>621<br>945<br>441<br>2535<br>441<br>714<br>657<br>2358  
  | (-)<br>(-)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+  | 99.385<br>99.623<br>98.544<br>99.682<br>97.945<br>99.289<br>99.315<br>99.156<br>97.706<br>99.236  |
| IMV is park higher service in (Cop-HSL)           RAP4 (RX) pal assoc preticin (Cop-HSL)           RAP4 (RX) pal assoc preticin (Cop-HSL)           DNA toposionerrace type I (Cop-HSR)           CVP-8-116           WYA-Branch and Cop-HSR.           CVP-8-116           Wind methane assembly proteins (VMAP) (Cop-HTR R)           mRNA capping encore large schwalit (Cop-DIR)           Wrinn ence (Cop-DSR)           Urinel-DNA glycoxylase, DNA polymerase processi vity factor (Cop-D4R)           NTPase, DNA phymer (Cop-D5R)           Morphogenesis, VTAF (early Transcription fact er small) (Cop-D6R)   | HIL<br>HIL<br>HSR<br>H6R<br>DIR<br>DIR<br>DIR<br>DIR<br>DJR<br>DJR<br>DJR<br>DJR<br>DJR<br>DJR<br>DJR<br>DJR<br>DJR<br>DJ   | CPXVI12<br>CPXVI12<br>CPXVI13<br>CPXVI14<br>CPXVI16<br>CPXVI16<br>CPXVI16<br>CPXVI17<br>CPXVI19<br>CPXVI19<br>CPXVI20<br>CPXVI21<br>CPXVI22<br>CPXVI23   | NoF1-10         103723         10           NoF1-10         103723         10           NoF1-10         103723         10           NoF1-110         103723         10           NoF1-110         103723         10           NoF1-110         103723         10           NoF1-110         103724         10           NoF1-111         108877         10           NoF1-113         109651         11           NoF1-114         11884         11           NoF1-115         1122871         10           NoF1-114         11884         11           NoF1-115         112884         11           NoF1-116         113000         11           NoF1-118         116868         11           NoF1-118         116086         11  
   
   
   | 7/20         37/0           700         978           088         2388           8894         621           8339         945           3117         441           895         2535           294         441           000         714           656         657           045         2358           999         1914  
   
   
   | (+)<br>(-)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+   | 98.542<br>99.385<br>99.623<br>93.782<br>99.682<br>98.63<br>99.526<br>99.315<br>99.156<br>99.156<br>98.165<br>98.599<br>100   | NoF2-101         105828         106137           NoF2-105         105178         107565           NoF2-101         107178         107565           NoF2-101         107171         103374           NoF2-111         108375         109319           NoF2-111         108375         109319           NoF2-113         109384         112375           NoF2-114         112334         112374           NoF2-115         112767         113480           NoF2-116         114480         114136           NoF2-116         114480         114136           NoF2-118         116566         118479  
   
  | 310         (*)           978         (-)           2388         (-)           624         (+)           945         (+)           9441         (+)           2535         (+)           441         (+)           714         (+)           657         (+)           1914         (+)  
  | 99.69<br>99.69<br>99.74<br>96.13<br>99.68<br>97.94<br>99.40<br>99.31<br>99.15<br>98.16<br>98.59<br>100   | 2 NoHI-100     2 NoHI-107     8 NoHI-109     2 NoHI-109     2 NoHI-110     5 NoHI-111     8 NoHI-112     5 NoHI-113     5 NoHI-114     5 NoHI-114     9 NoHI-115     9 NoHI-116     NoHI-117  
   
   | 104158 10513<br>105136 10752<br>107709 10833<br>109315 10977<br>109315 10975<br>109799 11233<br>112292 11273<br>112725 11343<br>113438 11409<br>114126 11648<br>116524 11843  | 5 978<br>3 2388<br>2 624<br>7 945<br>5 441<br>3 2535<br>2 441<br>8 714<br>4 657<br>3 2358<br>7 1914   
  | (-)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+  | 99.692<br>99.748<br>96.135<br>99.682<br>97.945<br>99.408<br>99.315<br>99.156<br>98.165<br>98.165<br>98.599<br>100   | well 1: 00         0:0049         970           well 1: 00         0:0449         978           well 1: 00         10:0430         10:0817         2388           well 1: 01         0:0762         0:21         2885           well 1: 10         10:7624         10:763         0:11           well 1: 10         10:7624         10:763         0:21           well 1: 11         10:8606         10:9046         441           well 1: 11         11:821         11:822         2535           well 1: 11         11:821         11:272         11:44           well 1: 11         11:1728         11:44         457           well 1: 11         11:2728         11:44         457           well 1: 11         11:1728         11:384         657           well 1: 11         11:1814         11:772         19:44  
   | (+)<br>(-)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+   
  | 99.385<br>99.623<br>98.544<br>99.682<br>97.945<br>99.289<br>99.315<br>99.156<br>97.706<br>99.236<br>100  
   | SweH2-107<br>SweH2-107<br>SweH2-108<br>SweH2-109<br>SweH2-110<br>SweH2-110<br>SweH2-111<br>SweH2-113<br>SweH2-113<br>SweH2-114<br>SweH2-115<br>SweH2-116<br>SweH2-117   
   | 102747<br>103318<br>104296<br>106869<br>107490<br>108472<br>108955<br>111448<br>1112594<br>113282<br>115680  | 104295<br>104295<br>106683<br>107489<br>108434<br>108912<br>111489<br>111888<br>112594<br>113250<br>113250<br>115639<br>117593   | 978<br>978<br>2388<br>621<br>945<br>441<br>2535<br>441<br>714<br>657<br>2358<br>1914  
  | (-)<br>(-)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+  | 99.385<br>99.623<br>98.544<br>99.682<br>97.945<br>99.289<br>99.315<br>99.315<br>99.156<br>97.706<br>99.236<br>100   |
| INV hepath billing surface protein (Cop-HSL)<br>RAP94 (RNA pal assoc protein (Cop-HSL)<br>INT-4 (last transpir) factor 47 (Cop-HSR)<br>DNA toposisomerase type I (Cop-HSR)<br>(Cyr4-B-116<br>Viral membrane assembly proteins (VMAP) (Cop-H7 R)<br>aRNA copping enzore large submit (Cop-D1R)<br>Virina core (Cop-D2R)<br>Virina core (Cop-D2R)   | HRL<br>H4L<br>H6R<br>H6R<br>H7R<br>D1R<br>D2L<br>D3R<br>D4R<br>D5R<br>D6R<br>D7R  | CPXVI12<br>CPXVI13<br>CPXVI13<br>CPXVI15<br>CPXVI15<br>CPXVI16<br>CPXVI16<br>CPXVI17<br>CPXVI18<br>CPXVI19<br>CPXVI20<br>CPXVI20<br>CPXVI21<br>CPXVI21<br>CPXVI23  | NoF1-101         103721         10           NoF1-101         103723         10           NoF1-101         103723         10           NoF1-101         107724         10           NoF1-111         107874         10           NoF1-112         108877         10           NoF1-113         103867         10           NoF1-115         112887         11           NoF1-116         113000         11           NoF1-116         113000         11           NoF1-117         116884         11           NoF1-119         118084         11           NoF1-119         118084         11           NoF1-119         118026         11   
   
   
  | 7/20         370           7700         978           0088         2388           8894         621           8399         945           3117         441           895         2535           294         441           000         714           656         657           045         2358           999         1914           511         486  
   
  | (+)<br>(-)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+   | 90.342<br>99.385<br>99.623<br>93.782<br>99.682<br>99.682<br>99.526<br>99.315<br>99.156<br>98.165<br>98.165<br>98.599<br>100<br>99.379  
   | NoF2-101         105828         1061371           NoF2-108         105175         105824           NoF2-101         105751         105824           NoF2-111         107851         108375           NoF2-112         109337         109797           NoF2-113         106844         112375           NoF2-114         112343         112747           NoF2-115         113480         114366           NoF2-116         113481         114365           NoF2-117         114468         116352           NoF2-116         113480         114366           NoF2-119         118306         118991  
   
   | 310         (2)           378         (-)           2388         (-)           624         (+)           945         (+)           441         (+)           441         (-)           714         (+)           657         (+)           2358         (+)           9194         (+)           486         (+)  
   | 99.69<br>99.69<br>99.74<br>96.13<br>99.68<br>97.94<br>99.40<br>99.31<br>99.15<br>99.15<br>98.16<br>98.59<br>100<br>99.37   | NoHI-100           NoHI-107           NoHI-108           NoHI-108           NoHI-109           NoHI-110           NoHI-110           NoHI-110           NoHI-111           NoHI-112           NoHI-113           NoHI-114           NoHI-114           NoHI-116           NoHI-117           NoHI-117           NoHI-118   
   
  | 00000000000000000000000000000000000000  | 5 978<br>3 2388<br>2 624<br>7 945<br>5 441<br>3 2535<br>2 441<br>8 714<br>4 657<br>3 2358<br>7 1914<br>9 486   | (-)<br>(-)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+   | 99.692<br>99.748<br>96.135<br>99.682<br>97.945<br>99.408<br>99.315<br>99.156<br>98.165<br>98.165<br>98.599<br>100<br>99.379   
   | memory interface         1000         1000         1000           well-1-00         1000         1000         1000         1000           well-1-00         1000<  
  | (+)<br>(-)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+  
   | 99.385<br>99.623<br>98.544<br>99.682<br>97.945<br>99.289<br>99.315<br>99.156<br>97.706<br>99.236<br>100<br>99.379   
  | SweH2-100<br>SweH2-107<br>SweH2-108<br>SweH2-109<br>SweH2-110<br>SweH2-110<br>SweH2-111<br>SweH2-112<br>SweH2-114<br>SweH2-115<br>SweH2-115<br>SweH2-117<br>SweH2-118  
  | 102747<br>103318<br>104296<br>106869<br>107490<br>108472<br>108955<br>111448<br>111881<br>112594<br>113282<br>115680<br>117620   | 104295<br>104295<br>106683<br>107489<br>108434<br>108912<br>111489<br>111888<br>112594<br>113250<br>115639<br>117593<br>118105   | 978<br>978<br>2388<br>621<br>945<br>441<br>2535<br>441<br>714<br>657<br>2358<br>1914<br>486  | (-)<br>(-)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+   
  | 99.385<br>99.623<br>98.544<br>99.682<br>97.945<br>99.289<br>99.315<br>99.156<br>97.706<br>99.236<br>100<br>99.379   |
| IMV legarin hinding surface protein (Cop-H3L) IXIPA (Int transaction (Cop-H3L) IXIPA (Int transaction (Cop-H3L) IXIPA (Int transaction Inter 4-1 (Cop-H3R) IXIPA (Int transaction Inter 4-1 (Cop-H3R) IXIPA (Int transaction INTER) IXIA (Inter Cop-H3R) IXIA (Inter 4-1 (Cop-H3R) IXIA (INTER) IX  | HRL<br>HAL<br>HSR<br>HBR<br>DIR<br>DIR<br>DIR<br>DIR<br>DIR<br>DIR<br>DIR<br>DIR<br>DSR<br>DBR<br>DBR<br>DBR<br>DSL   | CPXVII2<br>CPXVI12<br>CPXVI14<br>CPXVI14<br>CPXVI15<br>CPXVI16<br>CPXVI16<br>CPXVI16<br>CPXVI17<br>CPXVI19<br>CPXV120<br>CPXV121<br>CPXV121<br>CPXV121<br>CPXV121<br>CPXV121<br>CPXV121<br>CPXV121<br>CPXV121<br>CPXV121<br>CPXV121<br>CPXV121<br>CPXV121<br>CPXV121<br>CPXV121<br>CPXV121<br>CPXV121<br>CPXV121<br>CPXV121<br>CPXV121<br>CPXV121<br>CPXV121<br>CPXV121<br>CPXV121<br>CPXV121<br>CPXV121<br>CPXV121<br>CPXV121<br>CPXV121<br>CPXV114<br>CPXV115<br>CPXV114<br>CPXV115<br>CPXV116<br>CPXV116<br>CPXV116<br>CPXV116<br>CPXV116<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV117<br>CPXV120<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV127<br>CPXV17  | NoF1-108         105723         101           NoF1-108         103723         101           NoF1-101         10724         101           NoF1-110         10724         101           NoF1-111         10785         101           NoF1-112         108871         101           NoF1-112         108871         101           NoF1-112         108871         111           NoF1-113         113861         111           NoF1-115         112871         111           NoF1-115         112871         111           NoF1-115         112801         111           NoF1-115         112801         111           NoF1-115         112801         111           NoF1-115         112801         111           NoF1-115         112802         111           NoF1-12         118826         111           NoF1-12         118826         111           NoF1-12         118826         111           NoF1-12         118824         111  
   
   
  | 770         370           700         978           008         2388           894         621           839         945           317         441           895         2535           294         441           000         714           656         657           045         2358           999         1914           511         486           388         915  
   
  | (*)<br>(-)<br>(-)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+  |
90,342<br>99,382<br>99,623<br>93,782<br>99,682<br>99,682<br>99,682<br>99,526<br>99,315<br>99,156<br>98,165<br>98,165<br>98,599<br>100<br>99,379<br>97,368  | Nor2-101         103620         101479           Nor2-105         10420         105177           Nor2-109         105178         107565           Nor2-110         107571         109757           Nor2-111         108375         109319           Nor2-112         109357         109797           Nor2-113         109841         12335           Nor2-116         113480         114135           Nor2-116         113480         114136           Nor2-118         116566         114797           Nor2-118         116566         114797           Nor2-118         116566         11479           Nor2-119         118504         118984   
   
   | 310         (c)           378         (c)           2388         (c)           624         (e)           945         (e)           441         (e)           441         (e)           441         (e)           657         (e)           2358         (e)           1914         (e)           486         (e)           915         (c)  
   | 99.69<br>99.74<br>96.13<br>99.68<br>97.94<br>99.40<br>99.31<br>99.15<br>98.16<br>98.59<br>100<br>99.37   | NoHI-100           NoHI-107           NoHI-108           NoHI-109           NoHI-110           NoHI-110           NoHI-110           NoHI-110           NoHI-110           NoHI-110           NoHI-110           NoHI-110           NoHI-110           NoHI-111           NoHI-113           NoHI-115           NoHI-116           NoHI-117           NoHI-118           NoHI-118           NoHI-118           NoHI-118           NoHI-118           NoHI-118           NoHI-118           NoHI-118  
   
  | 104152 104152 104152<br>104158 105133<br>104158 105133<br>104158 105133<br>104158 105133<br>108333 10927<br>109315 10975<br>109335 10975<br>10333 10927<br>10333 10927<br>10343 10429<br>10343 1042    | 5 978<br>3 2388<br>2 624<br>7 945<br>5 441<br>3 2535<br>2 441<br>8 714<br>4 657<br>3 2358<br>7 1914<br>9 486<br>6 915  | (·)<br>(·)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+   | 99.692<br>99.748<br>96.135<br>99.682<br>97.945<br>99.408<br>99.315<br>99.156<br>98.165<br>98.165<br>98.599<br>100<br>99.379<br>99.355  
  | well-1.01         0342.5         04429         978           well-1.01         0342.6         04429         978           well-1.01         0132.6         021         821           well-1.01         0137.2         828         985           well-1.01         0137.2         845         985           well-1.01         0137.2         143         985           well-1.01         0137.2         143         985           well-1.01         0137.1         122         74           well-1.01         0137.1         122         74           well-1.01         1138         6177         288           well-1.01         1132.1         1132         735           well-1.01         1132.1         1132         74           well-1.01         1132.1         1133         6177           well-1.01         1132.1         1133         258           well-1.01         1177.1         1143         1177.1           well-1.01         1175.1         1143.0         1147.0           well-1.01         1147.0         1148         1147.0  | (+)<br>(-)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+   
   
  | 99.385<br>99.623<br>98.544<br>99.682<br>97.945<br>99.289<br>99.315<br>99.156<br>97.706<br>99.236<br>100<br>99.379<br>99.013  
   | SweH2-107<br>SweH2-107<br>SweH2-108<br>SweH2-108<br>SweH2-109<br>SweH2-110<br>SweH2-110<br>SweH2-112<br>SweH2-113<br>SweH2-114<br>SweH2-116<br>SweH2-116<br>SweH2-117<br>SweH2-118<br>SweH2-118<br>SweH2-118<br>SweH2-118   | 102747<br>103318<br>104296<br>106869<br>107490<br>108472<br>108955<br>111448<br>111881<br>112594<br>113282<br>115680<br>117620<br>118068  
  | 104295<br>106683<br>107489<br>108434<br>108912<br>111489<br>111888<br>112594<br>113250<br>115639<br>117593<br>118105<br>118982   | 978<br>2388<br>621<br>945<br>441<br>2535<br>441<br>714<br>657<br>2358<br>1914<br>486<br>915  | (-)<br>(-)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+  | 99.385<br>99.623<br>98.544<br>99.682<br>97.945<br>99.289<br>99.315<br>99.156<br>97.706<br>99.236<br>100<br>99.379<br>99.013   
   |
| MV Repath billing surface protein (Cop-HSL)     RAP4 (RA) pal assoc printing (Cop-HSL)     RAP4 (RA) pal assoc printing (Cop-HSL)     Text fut the transport (Cop-HSR)     Text (Second Second Se  | HIL<br>HIL<br>HIR<br>HIR<br>DIR<br>DIR<br>DIR<br>DIR<br>DIR<br>DIR<br>DIR<br>DIR<br>DIR<br>D  | CPXVII2<br>CPXVII2<br>CPXVII4<br>CPXVII4<br>CPXVI16<br>CPXVI16<br>CPXVI17<br>CPXVI17<br>CPXVI19<br>CPXV120<br>CPXV120<br>CPXV121<br>CPXV121<br>CPXV121<br>CPXV121<br>CPXV122<br>CPXV123<br>CPXV124<br>CPXV124<br>CPXV125<br>CPXV125  | NoF-101         1057-10           NoF1-108         10723           NoF1-109         10773-10           NoF1-111         10785           NoF1-111         10785           NoF1-111         10785           NoF1-111         10785           NoF1-111         10785           NoF1-113         10786           NoF1-114         11854           NoF1-115         107306           NoF1-116         113000           NoF1-117         13083           NoF1-118         110006           NoF1-119         110204           NoF1-119         110204           NoF1-119         110204           NoF1-119         110204           NoF1-119         110204           NoF1-120         110474   
   
   
   | 720         370           770         978           088         2388           894         621           839         945           317         441           895         2535           294         441           000         714           656         657           045         2358           999         1914           511         486           071         642   
   
   | (+)           (-)           (+)   | 90,382           99,385           99,623           99,623           99,682           99,682           99,526           99,315           99,156           98,165           98,599  
        100           97,368           100  | Nur_210         (M05.0)         (M17)           Nar2_106         (M20)         (M17)           Nar2_100         (M17)         (M17)           Nar2_110         (M17)         (M17)           Nar2_111         (M17)         (M17)           Nar2_112         (M17)         (M17)           Nar2_113         (M17)         (M17)           Nar2_114         (M17)         (M17)           Nar2_115         (M17)         (M17)           Nar2_116         (M17)         (M17)           Nar2_110         (M18)         (M17)           Nar2_200         (M18)         (M18)           Nar2_210         (M18)         (M18)  
   
   | 300         (c)           378         (c)           2388         (c)           624         (c)           945         (c)           441         (c)           441         (c)           714         (c)           657         (c)           2358         (c)           441         (c)           657         (c)           915         (c)           915         (c)           642         (c)   
   | 99.6%<br>99.6%<br>99.74<br>99.74<br>99.74<br>99.613<br>99.68<br>99.68<br>99.40<br>99.40<br>99.15<br>99.15<br>99.15<br>98.16<br>98.59<br>100<br>99.37<br>99.37<br>100   | NoHI-107     NoHI-107     NoHI-108     NoHI-108     NoHI-109     NoHI-110     NoHI-110     NoHI-111     NoHI-112     NoHI-114     NoHI-114     NoHI-115     NoHI-116     NoHI-117     P NoHI-117     P NoHI-119     NoHI-120   
   
  | <ul> <li>1041210415</li> <li>104136</li> <li>10136</li> <li>107522</li> <li>107709</li> <li>108333</li> <li>10927</li> <li>109315</li> <li>109757</li> <li>109315</li> <li>109759</li> <li>112333</li> <li>11222</li> <li>11233</li> <li>11242</li> <li>112438</li> <li>114091</li> <li>114846</li> <li>118912</li> <li>119828</li> <li>12050</li> </ul>  | 5         978           3         2388           2         624           7         945           5         441           3         2535           2         441           8         714           4         657           3         2358           7         1914           9         486           6         915           9         642  | (·)<br>(·)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+   | 99.692<br>99.748<br>96.135<br>99.682<br>99.682<br>99.882<br>99.315<br>99.156<br>98.165<br>98.599<br>100<br>99.379<br>98.355<br>100  
   | well-1:01         015:02         014:02         016:02           well-1:02         016:02   
  | (·)            
   | 99.85<br>99.623<br>99.623<br>98.544<br>99.682<br>97.945<br>99.289<br>99.315<br>99.156<br>99.156<br>99.266<br>100<br>99.379<br>99.013<br>100   
  | SweH2-117<br>SweH2-107<br>SweH2-107<br>SweH2-109<br>SweH2-110<br>SweH2-110<br>SweH2-111<br>SweH2-113<br>SweH2-114<br>SweH2-115<br>SweH2-115<br>SweH2-116<br>SweH2-117<br>SweH2-119<br>SweH2-119<br>SweH2-119<br>SweH2-119   |
102747<br>103318<br>104296<br>106869<br>107490<br>108472<br>108955<br>111448<br>111881<br>112594<br>113282<br>115680<br>117620<br>118068<br>119024   | 103295<br>106683<br>1074899<br>108434<br>108434<br>108434<br>111489<br>111489<br>111888<br>112594<br>113250<br>115639<br>117593<br>118105<br>118982<br>119665  | 978<br>2388<br>621<br>945<br>441<br>2535<br>441<br>714<br>657<br>2358<br>1914<br>486<br>915<br>642   | (-)           (-)           (+)   
  | 99.385<br>99.623<br>98.544<br>99.682<br>97.945<br>99.289<br>99.315<br>97.706<br>99.236<br>100<br>99.379<br>99.013<br>100  |
| IMV legath hinding surface protein (Cop-HBL) EATP4 RNX pat assoc protein (Cop-HBL) EATP4 RNX pat assoc protein (Cop-HBL) UN1 4 (the transport (Cop-HBR) (Cry-R-1-16 Viral methane assembly proteins (VNAP) (Cop-HR) (Cry-R-1-16 Viral methane assembly proteins (VNAP) (Cop-HR) (Virin core (Cop-DBL) Virins core (Cop-DBL) Virins core (Cop-DBL) (Trans-UNA glycoxylast, DNA polymerase processi viry factor (Cop-D4R) (Transe, Cop-DBR) (Cop-DBR)  | HEL<br>HAL<br>HER<br>HER<br>DIR<br>DIR<br>DIR<br>DIR<br>DIR<br>DER<br>DER<br>DIR<br>DER<br>DIR<br>DIR   | CPX1112<br>CPX1112<br>CPX1113<br>CPX1114<br>CPX1114<br>CPX1116<br>CPX116<br>CPX116<br>CPX116<br>CPX119<br>CPX119<br>CPX120<br>CPX121<br>CPX121<br>CPX122<br>CPX122<br>CPX122<br>CPX122<br>CPX124<br>CPX125<br>CPX124<br>CPX125<br>CPX126<br>CPX126<br>CPX126<br>CPX126<br>CPX127   | NoF-10         1037-11           NoF1-108         103723           NoF1-108         103723           NoF1-101         103724           NoF1-101         107274           NoF1-110         107274           NoF1-110         107274           NoF1-111         10785           NoF1-112         108877           NoF1-113         10886           NoF1-114         118544           NoF1-115         12287           NoF1-117         13086           NoF1-117         13086           NoF1-118         16086           NoF1-120         118247           NoF1-13         116886           NoF1-141         116844           NoF1-15         112877           NoF1-117         13688           NoF1-118         16086           NoF1-12         118474           NoF1-12         118474   
   
   
   | 120         570           120         978           120         978           120         978           120         978           120         978           120         978           120         945           121         945           123         945           121         945           123         945           123         945           123         945           1377         441           1495         2535           141         656           151         1486           1511         486           1511         486           1511         11642           141         747  
   
   | (·)           (·)           (+)   
   | 90,382<br>99,382<br>99,623<br>99,623<br>99,682<br>99,526<br>99,526<br>99,526<br>99,315<br>99,156<br>98,165<br>98,165<br>98,165<br>98,599<br>100<br>99,378<br>100<br>99,194   | Nur_210         (Mod2)         (Mod2)           Nur_2106         (Mod2)         (Mod2)           Nur_2106         (Mod2)         (Mod2)           Nur_2110         (Mod2)         (Mod2)           Nur_2111         (Mod2)         (Mod2)           Nur_2112         (Mod2)         (Mod2)           Nur_2113         (Mod2)         (Mod2)           Nur_2114         (Mod2)         (Mod2)           Nur_2115         (L276)         (L386)           Nur_2115         (L266)         (L186)           Nur_2111         (L466)         (L652)           Nur_2111         (L468)         (L652)           Nur_2110         (L468)         (L58)           Nur_2120         (L586)         (L990)           Nur_2121         (L463)         (L463)           Nur_2120         (L586)         (L463)  
   
  | 3/0         (·)           3/78         (·)           2388         (·)           624         (·)           945         (·)           441         (·)           774         (·)           441         (·)           774         (·)           2355         (·)           441         (·)           714         (·)           2358         (·)           915         (·)           915         (·)           915         (·)           747         (·)  
  | 99.6%<br>99.6%<br>99.744<br>99.613<br>99.68<br>97.944<br>99.400<br>99.31<br>99.15<br>98.161<br>98.59<br>100<br>99.37<br>98.35<br>100<br>99.19  | NoHI-107           NoHI-107           NoHI-108           NoHI-109           NoHI-110           NoHI-110           NoHI-111           NoHI-113           NoHI-114           NoHI-115           NoHI-114           NoHI-115           NoHI-117           NoHI-118           NoHI-117           NoHI-118           NoHI-119           NoHI-119           NoHI-121  
   
   | 100120 100121 1001200000000  | 5         978           5         978           3         2388           2         624           7         945           5         441           3         2535           2         441           3         2535           2         441           8         714           4         657           3         2358           7         1914           9         486           9         482           9         642           2         747   | (·)<br>(·)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+   | 99.692<br>99.692<br>99.748<br>96.135<br>99.682<br>99.408<br>99.315<br>99.156<br>98.595<br>100<br>99.379<br>98.355<br>100<br>99.194   
  | well-1.01         013-02         014-02         978           well-1.01         013-02         04-02         04-02         04-02         04-02         02-02   
   | (+)<br>(-)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+   
  | 99.85<br>99.623<br>98.544<br>99.682<br>97.945<br>99.289<br>99.315<br>99.156<br>99.236<br>99.236<br>100<br>99.379<br>99.013<br>100<br>99.597  
   | SweH2-107<br>SweH2-107<br>SweH2-107<br>SweH2-108<br>SweH2-110<br>SweH2-110<br>SweH2-110<br>SweH2-112<br>SweH2-115<br>SweH2-115<br>SweH2-116<br>SweH2-117<br>SweH2-118<br>SweH2-119<br>SweH2-110<br>SweH2-120<br>SweH2-121   
   | 102747<br>103318<br>104296<br>106869<br>107490<br>108472<br>108955<br>111448<br>1112594<br>113282<br>115680<br>117620<br>118068<br>119024<br>119662  | 103295<br>106683<br>1074899<br>108434<br>108434<br>108434<br>111489<br>111489<br>111888<br>112594<br>113250<br>115639<br>117593<br>118105<br>118982<br>119665<br>120408  | 978<br>2388<br>621<br>945<br>441<br>2535<br>441<br>714<br>657<br>2358<br>1914<br>486<br>915<br>642<br>747  | (-)           (-)           (+)  
   | 93.38<br>99.62<br>98.544<br>99.682<br>97.945<br>99.289<br>99.315<br>99.156<br>99.236<br>100<br>99.236<br>100<br>99.379  |
| INV Repath billing surface protein (Cop-HSL)<br>RAP4 (RNA pal assoc pretein (Cop-HSL)<br>RAP4 (RNA pal assoc pretein (Cop-HSL)<br>DNA toposisemerase type I (Cop-HSR)<br>(Cry-B-116<br>(Cry-B-116<br>(Cry-B-116<br>(Cop-DSR)<br>Wrian emer (Cop-DSR)<br>Wrian come (Cop-DSR)<br>Morphogenesis, VETPE ( early transcription fact or small) (Cop-D6R)<br>RNA adepting enzyme (Cop-D7R)<br>Carbonic attyprates, GAC-binding, DI M renzhnar pr otein (Cop-DSL)<br>mRNA decapping enzyme (Cop-D1R)<br>MRNA decapping enzyme (Cop-D1R)  | HIL<br>HAL<br>HSR<br>HGR<br>HGR<br>DIR<br>DIR<br>DIR<br>DIR<br>DSR<br>DGR<br>DFR<br>DFR<br>DIGR<br>DIR<br>DIR   | CPXVII2<br>CPXVII2<br>CPXVII4<br>CPXVII6<br>CPXVI16<br>CPXVI16<br>CPXVI16<br>CPXVI17<br>CPXVI19<br>CPXVI20<br>CPXVI21<br>CPXVI21<br>CPXVI22<br>CPXVI22<br>CPXVI22<br>CPXVI25<br>CPXVI25<br>CPXVI25   | NoF-10         103721           NoF1-108         103723           NoF1-109         104701           NoF1-110         107274           NoF1-111         107274           NoF1-111         107274           NoF1-113         109361           NoF1-113         109361           NoF1-113         109361           NoF1-113         109361           NoF1-114         118541           NoF1-115         103661           NoF1-116         13000           NoF1-118         116686           NoF1-121         1193893           NoF1-121         119430           NoF1-122         120861           NoF1-22         120861  
   
   
  | 120         570           120         978           120         978           120         978           120         978           120         979           1317         441           889         945           1317         441           885         2535           224         441           656         657           045         2538           999         1914           511         486           3388         915           071         642           844         747           710         1896   
   
   
  | (+)           (-)   | 36,342           99,385           99,623           99,623           99,623           99,623           99,682           99,682           99,633           99,526           99,515           99,156           98,559           100           99,379           99,379           99,194           99,842   | Mar 210         (Mod. 34)           Mar 210         (Mod. 45)           Mar 2110         (Mod. 45)           Mar 2111         (Mod. 45)           Mar 2111         (Mod. 45)           Mar 2112         (Mod. 45)           Mar 2113         (Mod. 45)           Mar 2114         (Mod. 45)           Mar 211         (Mod. 45)           Mar 212         (Mod. 45)           Mar 212         (Mod. 45)           Mar 212   
   
   | 300         (c)           2388         (.)           2388         (.)           624         (.)           441         (.)           2355         (.)           441         (.)           457         (.)           657         (.)           1914         (.)           915         (.)           646         (.)           915         (.)           642         (.)           747         (.)           1896         (.)  
   | 99.6%<br>99.6%<br>99.74<br>99.74<br>99.74<br>99.74<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75  | Norm-100           Norm-101           Norm-101 <t< th=""><th>104158 1051 331<br/>105136 107522<br/>107709 10833<br/>108333 10927<br/>109315 109755<br/>109799 112333<br/>112702 11273<br/>112702 11273<br/>112702 11273<br/>112725 11343<br/>112725 11343<br/>11409<br/>11425 116454 11844<br/>118524 11845<br/>118645 11845<br/>118645 11845<br/>11865 119868 120509<br/>119868 120509 12125<br/>121253 123144</th><th>5         978           3         2388           2         624           7         945           5         441           3         2535           2         441           8         714           4         657           3         2358           7         1914           9         486           6         915           9         642           2         747           8         1896</th><th>(·)<br/>(·)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+</th><th>99.692<br/>99.692<br/>99.748<br/>96.135<br/>99.682<br/>99.408<br/>99.315<br/>99.156<br/>98.165<br/>98.599<br/>100<br/>99.379<br/>99.379<br/>99.355<br/>100<br/>99.379</th><th>main role         1000         976           well -100         1000         1000         976           well -100         1000         1000         2000           well -101         10000         10000         800           well -110         10000         10000         40000           well -110         10000         1102         2355           well -110         10000         1102         441           well -110         11005         1122         441           well -113         1136         1136         1577         238           well -113         1136         1136         1577         238         467           well -113         1136         1136         1137         238         467           well -13         1136         1136         1137         238         467           well -14         1136         1136         1137         <t< th=""><th>(·)           (·)</th><th>99.385<br/>99.623<br/>98.544<br/>99.682<br/>97.945<br/>99.289<br/>99.3156<br/>97.706<br/>99.236<br/>100<br/>99.379<br/>99.013<br/>100<br/>99.597<br/>99.842</th><th>SweH2-107<br/>SweH2-107<br/>SweH2-107<br/>SweH2-108<br/>SweH2-109<br/>SweH2-110<br/>SweH2-110<br/>SweH2-111<br/>SweH2-113<br/>SweH2-116<br/>SweH2-116<br/>SweH2-116<br/>SweH2-119<br/>SweH2-112<br/>SweH2-121<br/>SweH2-122<br/>SweH2-122</th><th>102747<br/>103318<br/>104296<br/>106869<br/>107490<br/>108472<br/>108955<br/>111448<br/>1112594<br/>113282<br/>115680<br/>117620<br/>118068<br/>119024<br/>119662<br/>120409</th><th>103912<br/>104295<br/>106683<br/>107489<br/>108434<br/>108912<br/>111489<br/>111888<br/>112594<br/>113250<br/>115639<br/>117593<br/>118105<br/>118805<br/>118805<br/>118805<br/>119665<br/>120408<br/>122304</th><th>978<br/>978<br/>2388<br/>621<br/>945<br/>441<br/>2535<br/>441<br/>714<br/>657<br/>2358<br/>1914<br/>486<br/>915<br/>642<br/>747<br/>1896</th><th>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)</th><th>93.385<br/>99.623<br/>98.544<br/>99.682<br/>99.682<br/>99.289<br/>99.156<br/>99.156<br/>99.236<br/>99.2379<br/>99.013<br/>100<br/>99.379<br/>99.013</th></t<></th></t<>  
   
   | 104158 1051 331<br>105136 107522<br>107709 10833<br>108333 10927<br>109315 109755<br>109799 112333<br>112702 11273<br>112702 11273<br>112702 11273<br>112725 11343<br>112725 11343<br>11409<br>11425 116454 11844<br>118524 11845<br>118645 11845<br>118645 11845<br>11865 119868 120509<br>119868 120509 12125<br>121253 123144  | 5         978           3         2388           2         624           7         945           5         441           3         2535           2         441           8         714           4         657           3         2358           7         1914           9         486           6         915           9         642           2         747           8         1896   | (·)<br>(·)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+   | 99.692<br>99.692<br>99.748<br>96.135<br>99.682<br>99.408<br>99.315<br>99.156<br>98.165<br>98.599<br>100<br>99.379<br>99.379<br>99.355<br>100<br>99.379   
  | main role         1000         976           well -100         1000         1000         976           well -100         1000         1000         2000           well -101         10000         10000         800           well -110         10000         10000         40000           well -110         10000         1102         2355           well -110         10000         1102         441           well -110         11005         1122         441           well -113         1136         1136         1577         238           well -113         1136         1136         1577         238         467           well -113         1136         1136         1137         238         467           well -13         1136         1136         1137         238         467           well -14         1136         1136         1137 <t< th=""><th>(·)           (·)</th><th>99.385<br/>99.623<br/>98.544<br/>99.682<br/>97.945<br/>99.289<br/>99.3156<br/>97.706<br/>99.236<br/>100<br/>99.379<br/>99.013<br/>100<br/>99.597<br/>99.842</th><th>SweH2-107<br/>SweH2-107<br/>SweH2-107<br/>SweH2-108<br/>SweH2-109<br/>SweH2-110<br/>SweH2-110<br/>SweH2-111<br/>SweH2-113<br/>SweH2-116<br/>SweH2-116<br/>SweH2-116<br/>SweH2-119<br/>SweH2-112<br/>SweH2-121<br/>SweH2-122<br/>SweH2-122</th><th>102747<br/>103318<br/>104296<br/>106869<br/>107490<br/>108472<br/>108955<br/>111448<br/>1112594<br/>113282<br/>115680<br/>117620<br/>118068<br/>119024<br/>119662<br/>120409</th><th>103912<br/>104295<br/>106683<br/>107489<br/>108434<br/>108912<br/>111489<br/>111888<br/>112594<br/>113250<br/>115639<br/>117593<br/>118105<br/>118805<br/>118805<br/>118805<br/>119665<br/>120408<br/>122304</th><th>978<br/>978<br/>2388<br/>621<br/>945<br/>441<br/>2535<br/>441<br/>714<br/>657<br/>2358<br/>1914<br/>486<br/>915<br/>642<br/>747<br/>1896</th><th>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)</th><th>93.385<br/>99.623<br/>98.544<br/>99.682<br/>99.682<br/>99.289<br/>99.156<br/>99.156<br/>99.236<br/>99.2379<br/>99.013<br/>100<br/>99.379<br/>99.013</th></t<>  
  | (·)            
   | 99.385<br>99.623<br>98.544<br>99.682<br>97.945<br>99.289<br>99.3156<br>97.706<br>99.236<br>100<br>99.379<br>99.013<br>100<br>99.597<br>99.842   
  | SweH2-107<br>SweH2-107<br>SweH2-107<br>SweH2-108<br>SweH2-109<br>SweH2-110<br>SweH2-110<br>SweH2-111<br>SweH2-113<br>SweH2-116<br>SweH2-116<br>SweH2-116<br>SweH2-119<br>SweH2-112<br>SweH2-121<br>SweH2-122<br>SweH2-122   | 102747<br>103318<br>104296<br>106869<br>107490<br>108472<br>108955<br>111448<br>1112594<br>113282<br>115680<br>117620<br>118068<br>119024<br>119662<br>120409                    
   | 103912<br>104295<br>106683<br>107489<br>108434<br>108912<br>111489<br>111888<br>112594<br>113250<br>115639<br>117593<br>118105<br>118805<br>118805<br>118805<br>119665<br>120408<br>122304   | 978<br>978<br>2388<br>621<br>945<br>441<br>2535<br>441<br>714<br>657<br>2358<br>1914<br>486<br>915<br>642<br>747<br>1896   | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  
  | 93.385<br>99.623<br>98.544<br>99.682<br>99.682<br>99.289<br>99.156<br>99.156<br>99.236<br>99.2379<br>99.013<br>100<br>99.379<br>99.013  |
| IMV legath hinding surface protein (Cop-H3L)<br>EATP4 RNA pail assoc protein (Cop-H3L)<br>EATP4 RNA pail assoc protein (Cop-H3R)<br>DNA toposionernes type 1 (Cop-H3R)<br>(CVP-8-116<br>Viral membrane assembly proteins (VMAP) (Cop-H7R R)<br>anRNA copping encore large schadult (Cop-D4R)<br>Virins core (Cop-D3R)<br>Virins core (Cop-D3R)<br>Urad-BYA glycoxylase, DNA polymense processivity factor (Cop-D4R)<br>Mraphagenesis, VETF+ (carly transcription fact or small) (Cop-D4R)<br>Mraphagenesis, VETF+ (carly transcription fact or small) (Cop-D4R)<br>EANA by polymense cop-D3R)<br>Carlobar Anglycoxylase, DNA polymense processivity factor (Cop-D4R)<br>Mraphagenesis, VETF+ (carly transcription fact or small) (Cop-D4R)<br>EANA by polymense cop-D3R)<br>anRNA decapting compare (Cop-D3R)<br>ARNA decapting compare (Cop-D3R)  | H3L<br>H4L<br>H5R<br>H6R<br>·<br>·<br>DIR<br>D1R<br>D2L<br>D3R<br>D3R<br>D5R<br>D5R<br>D6R<br>D7R<br>D8L<br>D7R<br>D8L<br>D9R<br>D10R<br>D11L<br>D12L   | CPX1112<br>CPX1112<br>CPX1113<br>CPX1114<br>CPX1115<br>CPX1116<br>CPX1116<br>CPX1116<br>CPX1117<br>CPX1120<br>CPX1121<br>CPX1121<br>CPX1121<br>CPX1123<br>CPX1123<br>CPX1123<br>CPX1123<br>CPX1123<br>CPX1124<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1125<br>CPX1135<br>CPX1135<br>CPX1135<br>CPX1135<br>CPX1135<br>CPX1135<br>CPX1135<br>CPX1135<br>CPX1135<br>CPX1135<br>CPX1135<br>CPX1135<br>CPX1135<br>CPX1135<br>CPX1135<br>CPX1135<br>CPX1135<br>CPX1135<br>CPX1135<br>CPX1135<br>CPX1135<br>CPX1135<br>CPX1135<br>CPX1135<br>CPX1135<br>CPX1135<br>CPX1135<br>CPX1135<br>CPX1135<br>CPX1135<br>CPX1135<br>CPX1135<br>CPX1135<br>CPX1135<br>CPX1135<br>CPX1135<br>CPX1135<br>CPX1135<br>CPX1135<br>CPX1135<br>CPX1135<br>CPX123<br>CPX123<br>CPX123<br>CPX123<br>CPX123<br>CPX123<br>CPX123<br>CPX123<br>CPX123<br>CPX123<br>CPX123<br>CPX123<br>CPX123<br>CPX123<br>CPX123<br>CPX123<br>CPX123<br>CPX123<br>CPX123<br>CPX123<br>CPX123<br>CPX123<br>CPX123<br>CPX123<br>CPX125<br>CPX123<br>CPX123<br>CPX123<br>CPX123<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>CPX125<br>C  | NoF-10         1037-10           NoF1-108         103723           NoF1-108         103723           NoF1-108         103723           NoF1-110         107274           NoF1-111         107374           NoF1-112         108871           NoF1-111         107885           NoF1-112         108871           NoF1-113         107864           NoF1-114         113884           NoF1-115         112387           NoF1-115         112387           NoF1-115         112387           NoF1-115         112380           NoF1-115         112387           NoF1-115         112387           NoF1-115         112387           NoF1-115         112380           NoF1-115         112300           NoF1-12         113002           NoF1-12         113026           NoF1-12         11481           NoF1-12         114830           NoF1-12         114830           NoF1-12         114830           NoF1-12         114830           NoF1-12         120805           NoF1-12         120817           NoF1-12         120817 </th <th>120         570           120         978           120         978           100         978           100         978           101         839           102         945           103         141           105         2535           294         441           1000         714           656         657           045         2538           999         1914           511         486           338         915           0711         642           814         747           710         1896           607         864</th> <th>(+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (-)           (-)         (-)</th> <th>39,342           99,385           99,623           99,682           99,682           99,682           99,682           99,682           99,156           98,165           98,165           98,165           99,379           97,368           100           99,194           99,682</th> <th>Nur_210         (Mod.2)         (Mod.2)           Nur_210         (Mod.2)         (Mod.2)           Nur_210         (Mod.2)         (Mod.2)           Nur_2110         (Mod.2)         (Mod.2)           Nur_2111         (Mod.2)         (Mod.2)           Nur_2112         (Mod.2)         (Mod.2)           Nur_2113         (Mod.2)         (Mod.2)           Nur_2114         (Mod.2)         (Mod.2)           Nur_2115         (Mod.2)         (Mod.2)           Nur_2116         (Mod.2)         (Mod.2)           Nur_2121         (Mod.2)         (Mod.2)           Nur_2121         (Mod.2)         (Mod.2)           Nur_2122         (Mod.2)         (Mod.2)           Nur_2122         (Mod.2)         (Mod.2)           Nur_2122         (Mod.2)         (Mod.2)           Nur_2122         (Mod.</th> <th>200         (·)           288         (·)           624         (·)           624         (·)           945         (·)           441         (·)           2335         (·)           441         (·)           2358         (·)           1914         (·)           2358         (·)           915         (·)           915         (·)           747         (·)           864         (·)</th>
<th>99.6%<br/>99.6%<br/>99.74<br/>99.74<br/>99.74<br/>99.74<br/>99.58<br/>99.40<br/>99.51<br/>98.85<br/>99.51<br/>98.85<br/>99.55<br/>100<br/>99.51<br/>99.55<br/>100<br/>99.19<br/>99.55<br/>100<br/>99.54<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55<br/>99.55</th> <th>Norli-100           Norli-101           Norli-108           Norli-108           Norli-108           Norli-108           Norli-108           Norli-101           Norli-110           Norli-111           <td< th=""><th>1001200 1001200000000000000000000000000</th><th>5         978           3         2388           2         624           7         945           5         441           3         2535           2         441           8         714           4         6578           3         2358           7         1914           9         486           6         915           9         642           2         747           9         486           6         915           9         642           2         747           5         864</th><th>(·)<br/>(·)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+</th><th>99.692<br/>99.748<br/>96.135<br/>99.682<br/>99.682<br/>99.485<br/>99.408<br/>99.315<br/>99.156<br/>98.165<br/>98.599<br/>100<br/>99.379<br/>98.355<br/>100<br/>99.379<br/>99.355<br/>100<br/>99.194<br/>99.842<br/>99.652</th><th>near-rise         near-rise         near-rise         near-rise           near-rise         near-rise         near-rise         near-rise           well-1-01         near-rise         near-rise         near-rise           well-1-01         near-rise         near-rise         near-rise           well-1-11         near-rise         near-rise         near-rise           well-1-16         near-rise         near-rise         near-rise</th><th>(*)<br/>(*)<br/>(*)<br/>(*)<br/>(*)<br/>(*)<br/>(*)<br/>(*)<br/>(*)<br/>(*)</th><th>99385<br/>99385<br/>99385<br/>99623<br/>98544<br/>99682<br/>97.945<br/>99.289<br/>99.315<br/>99.156<br/>99.289<br/>99.315<br/>99.156<br/>100<br/>99.379<br/>99.013<br/>100<br/>99.5872<br/>99.5872<br/>100</th><th>Swelt2.177<br/>Swelt2.177<br/>Swelt2.177<br/>Swelt2.170<br/>Swelt2.108<br/>Swelt2.110<br/>Swelt2.110<br/>Swelt2.110<br/>Swelt2.113<br/>Swelt2.113<br/>Swelt2.114<br/>Swelt2.115<br/>Swelt2.115<br/>Swelt2.115<br/>Swelt2.115<br/>Swelt2.112<br/>Swelt2.120<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121</th><th>102747<br/>103318<br/>104296<br/>106869<br/>107490<br/>108472<br/>108955<br/>111448<br/>111881<br/>112594<br/>113282<br/>115680<br/>117620<br/>118068<br/>119024<br/>119662<br/>120409<br/>122338</th><th>104295<br/>104295<br/>106683<br/>107489<br/>108434<br/>108912<br/>111489<br/>111888<br/>112594<br/>113250<br/>115639<br/>117593<br/>118105<br/>118982<br/>119665<br/>120408<br/>122304<br/>123201</th><th>978           978           2388           621           945           441           2535           441           2535           441           657           2358           1914           486           915           642           747           1896           864</th><th>(·)           (·)</th><th>93.38<br/>99.623<br/>98.544<br/>97.945<br/>99.289<br/>99.315<br/>99.156<br/>97.706<br/>99.239<br/>99.315<br/>99.236<br/>100<br/>99.379<br/>100<br/>99.379<br/>100<br/>99.597<br/>99.597<br/>100</th></td<></th>   
   
  | 120         570           120         978           120         978           100         978           100         978           101         839           102         945           103         141           105         2535           294         441           1000         714           656         657           045         2538           999         1914           511         486           338         915           0711         642           814         747           710         1896           607         864  
   
  | (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)      
  (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (-)           (-)         (-)   | 39,342           99,385           99,623           99,682           99,682           99,682           99,682           99,682           99,156           98,165           98,165           98,165           99,379           97,368           100           99,194           99,682  | Nur_210         (Mod.2)         (Mod.2)           Nur_210         (Mod.2)         (Mod.2)           Nur_210         (Mod.2)         (Mod.2)           Nur_2110         (Mod.2)         (Mod.2)           Nur_2111         (Mod.2)         (Mod.2)           Nur_2112         (Mod.2)         (Mod.2)           Nur_2113         (Mod.2)         (Mod.2)           Nur_2114         (Mod.2)         (Mod.2)           Nur_2115         (Mod.2)         (Mod.2)           Nur_2116         (Mod.2)         (Mod.2)           Nur_2121         (Mod.2)         (Mod.2)           Nur_2121         (Mod.2)         (Mod.2)           Nur_2122         (Mod.2)         (Mod.2)           Nur_2122         (Mod.2)         (Mod.2)           Nur_2122         (Mod.2)         (Mod.2)           Nur_2122         (Mod.  
   
   | 200         (·)           288         (·)           624         (·)           624         (·)           945         (·)           441         (·)           2335         (·)           441         (·)           2358         (·)           1914         (·)           2358         (·)           915         (·)           915         (·)           747         (·)           864         (·)   
   | 99.6%<br>99.6%<br>99.74<br>99.74<br>99.74<br>99.74<br>99.58<br>99.40<br>99.51<br>98.85<br>99.51<br>98.85<br>99.55<br>100<br>99.51<br>99.55<br>100<br>99.19<br>99.55<br>100<br>99.54<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55<br>99.55   | Norli-100           Norli-101           Norli-108           Norli-108           Norli-108           Norli-108           Norli-108           Norli-101           Norli-110           Norli-111           Norli-111 <td< th=""><th>1001200 1001200000000000000000000000000</th><th>5         978           3         2388           2         624           7         945           5         441           3         2535           2         441           8         714           4         6578           3         2358           7         1914           9         486           6         915           9         642           2         747           9         486           6         915           9         642           2         747           5         864</th><th>(·)<br/>(·)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+</th><th>99.692<br/>99.748<br/>96.135<br/>99.682<br/>99.682<br/>99.485<br/>99.408<br/>99.315<br/>99.156<br/>98.165<br/>98.599<br/>100<br/>99.379<br/>98.355<br/>100<br/>99.379<br/>99.355<br/>100<br/>99.194<br/>99.842<br/>99.652</th><th>near-rise         near-rise         near-rise         near-rise           near-rise         near-rise         near-rise         near-rise           well-1-01         near-rise         near-rise         near-rise           well-1-01         near-rise         near-rise         near-rise           well-1-11         near-rise         near-rise         near-rise           well-1-16         near-rise         near-rise         near-rise</th><th>(*)<br/>(*)<br/>(*)<br/>(*)<br/>(*)<br/>(*)<br/>(*)<br/>(*)<br/>(*)<br/>(*)</th><th>99385<br/>99385<br/>99385<br/>99623<br/>98544<br/>99682<br/>97.945<br/>99.289<br/>99.315<br/>99.156<br/>99.289<br/>99.315<br/>99.156<br/>100<br/>99.379<br/>99.013<br/>100<br/>99.5872<br/>99.5872<br/>100</th><th>Swelt2.177<br/>Swelt2.177<br/>Swelt2.177<br/>Swelt2.170<br/>Swelt2.108<br/>Swelt2.110<br/>Swelt2.110<br/>Swelt2.110<br/>Swelt2.113<br/>Swelt2.113<br/>Swelt2.114<br/>Swelt2.115<br/>Swelt2.115<br/>Swelt2.115<br/>Swelt2.115<br/>Swelt2.112<br/>Swelt2.120<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121<br/>Swelt2.121</th><th>102747<br/>103318<br/>104296<br/>106869<br/>107490<br/>108472<br/>108955<br/>111448<br/>111881<br/>112594<br/>113282<br/>115680<br/>117620<br/>118068<br/>119024<br/>119662<br/>120409<br/>122338</th><th>104295<br/>104295<br/>106683<br/>107489<br/>108434<br/>108912<br/>111489<br/>111888<br/>112594<br/>113250<br/>115639<br/>117593<br/>118105<br/>118982<br/>119665<br/>120408<br/>122304<br/>123201</th><th>978           978           2388           621           945           441           2535           441           2535           441           657           2358           1914           486           915           642           747           1896           864</th><th>(·)           (·)</th><th>93.38<br/>99.623<br/>98.544<br/>97.945<br/>99.289<br/>99.315<br/>99.156<br/>97.706<br/>99.239<br/>99.315<br/>99.236<br/>100<br/>99.379<br/>100<br/>99.379<br/>100<br/>99.597<br/>99.597<br/>100</th></td<>   
   
  | 1001200 1001200000000000000000000000000   | 5         978           3         2388           2         624           7         945           5         441           3         2535           2         441           8         714           4         6578           3         2358           7         1914           9         486           6         915           9         642           2         747           9         486           6         915           9         642           2         747           5         864   | (·)<br>(·)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+   | 99.692<br>99.748<br>96.135<br>99.682<br>99.682<br>99.485<br>99.408<br>99.315<br>99.156<br>98.165<br>98.599<br>100<br>99.379<br>98.355<br>100<br>99.379<br>99.355<br>100<br>99.194<br>99.842<br>99.652   
   | near-rise         near-rise         near-rise         near-rise           near-rise         near-rise         near-rise         near-rise           well-1-01         near-rise         near-rise         near-rise           well-1-01         near-rise         near-rise         near-rise           well-1-11         near-rise         near-rise         near-rise           well-1-16         near-rise         near-rise         near-rise  | (*)<br>(*)<br>(*)<br>(*)<br>(*)<br>(*)<br>(*)<br>(*)<br>(*)<br>(*)   
   
   | 99385<br>99385<br>99385<br>99623<br>98544<br>99682<br>97.945<br>99.289<br>99.315<br>99.156<br>99.289<br>99.315<br>99.156<br>100<br>99.379<br>99.013<br>100<br>99.5872<br>99.5872<br>100   
  | Swelt2.177<br>Swelt2.177<br>Swelt2.177<br>Swelt2.170<br>Swelt2.108<br>Swelt2.110<br>Swelt2.110<br>Swelt2.110<br>Swelt2.113<br>Swelt2.113<br>Swelt2.114<br>Swelt2.115<br>Swelt2.115<br>Swelt2.115<br>Swelt2.115<br>Swelt2.112<br>Swelt2.120<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121<br>Swelt2.121  | 102747<br>103318<br>104296<br>106869<br>107490<br>108472<br>108955<br>111448<br>111881<br>112594<br>113282<br>115680<br>117620<br>118068<br>119024<br>119662<br>120409<br>122338   
   | 104295<br>104295<br>106683<br>107489<br>108434<br>108912<br>111489<br>111888<br>112594<br>113250<br>115639<br>117593<br>118105<br>118982<br>119665<br>120408<br>122304<br>123201   | 978           978           2388           621           945           441           2535           441           2535           441           657           2358           1914           486           915           642           747           1896           864  | (·)            | 93.38<br>99.623<br>98.544<br>97.945<br>99.289<br>99.315<br>99.156<br>97.706<br>99.239<br>99.315<br>99.236<br>100<br>99.379<br>100<br>99.379<br>100<br>99.597<br>99.597<br>100  
  |
| INV hepathiologies and the protein (Cop-HSL)<br>RAP4 (RN) pad assoc protein (Cop-HSL)<br>RAP4 (RN) pad assoc protein (Cop-HSR)<br>(Cop-HSL)<br>DNA toposisemerase type I (Cop-HSR)<br>(Cyr-B-116<br>Wind membrane assembly proteins (VMAP) (Cop-HTR)<br>BNA cogging corne large submait (Cop-DTR)<br>Virine core (Cop-D2R)<br>Virine core (Cop-D2R)<br>Control-D3A (provides D-NA polymer new processi vity factor (Cop-D4R)<br>NTPase, DA primes (Cop-D5R)<br>Merylangenciss: Virite's (carb transcription fact or small) (Cop-D6R)<br>RNA abcopping carpuse (Cop-D7R)<br>mRNA decopping carpuse (Cop-D1R)<br>MTNese, NFII (Cop-D1R)<br>MTNese, NFII (Cop-D1R)<br>MRNA copping carpuse (Cop-D1R)<br>MRNA copping carpuse (Cop-D1R)<br>MRNA copping carpuse (Cop-D1R)<br>MRNA copping carpuse (Cop-D12).<br>W, Tan withows 166  | HSL<br>HHL<br>HFR<br>HRR<br>DIR<br>DIR<br>DIR<br>DIR<br>DIR<br>DFR<br>DFR<br>DFR<br>DFR<br>DIR<br>DIR<br>DIR<br>DIR<br>DIR<br>DIR<br>DIR<br>DFR<br>DIR<br>DIR<br>DFR<br>DIR<br>DFR<br>DIR<br>DFR<br>DFR<br>DFR<br>DFR<br>DFR<br>DFR<br>DFR<br>DFR<br>DFR<br>DF  | CPAVII2<br>CPAVII3<br>CPAVII3<br>CPAVII3<br>CPAVII6<br>CPAVI16<br>CPAVI16<br>CPAVI16<br>CPAVI16<br>CPAVI16<br>CPAVI18<br>CPAV120<br>CPAV120<br>CPAV120<br>CPAV121<br>CPAV121<br>CPAV121<br>CPAV121<br>CPAV121<br>CPAV125<br>CPAV125<br>CPAV125<br>CPAV127<br>CPAV126<br>CPAV127<br>CPAV126<br>CPAV127<br>CPAV126<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV127<br>CPAV17  | NoF-10         1037-10           NoF1-108         103723           NoF1-108         103723           NoF1-109         104701           NoF1-111         107324           NoF1-111         107324           NoF1-111         107324           NoF1-111         107324           NoF1-111         107385           NoF1-111         107387           NoF1-115         10360           NoF1-115         10360           NoF1-115         10360           NoF1-115         10368           NoF1-115         10368           NoF1-115         10368           NoF1-115         10368           NoF1-12         113638           NoF1-12         113688           NoF1-12         113688           NoF1-12         118474           NoF1-12         1204815   
   
   
  | 120         570           120         978           120         978           128         2388           128         2388           129         945           1317         441           1895         2535           224         441           000         714           656         657           0452         2358           999         1914           511         486           3388         915           071         642           814         747           710         1896           607         864  
   
   
  | (·)             | 36,342           99,385           99,623           93,782           99,682           98,63           99,526           99,315           99,526           99,315           99,154           98,599           100           99,194           99,194           99,842           99,652   | M02-10         (M02, M04, M04, M04, M04, M04, M04, M04, M04   
   
   | $\begin{array}{cccc} & & & & & \\ & & & & &
\\ & & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & & \\ $   | 99.6%<br>99.6%<br>99.74<br>99.74<br>99.74<br>99.74<br>99.74<br>99.75<br>99.75<br>99.40<br>99.97<br>99.75<br>100<br>99.97<br>100<br>99.97<br>99.55  | Nath:100           Nath:101           Nath:108           Nath:108           Nath:109           Nath:109           Nath:111           Nath:112           Nath:12           Nath:12           Nath:12   
   
   | 100121 101132<br>101136 101137<br>101136 101137<br>101136 101752<br>101709 108333<br>10027<br>100315 10975<br>100315 10975<br>100315 10975<br>101232 11233<br>11252 11343<br>11252 11343<br>11452 11443<br>11552 11843<br>11552 11845<br>11552 11845<br>11552 11845<br>11552 11845<br>11552 11845<br>11552 11845<br>11552 11845<br>11552 11845<br>11552 11845<br>11552 1155<br>11552 1155<br>11555<br>11555<br>11555<br>11555<br>11555<br>11555<br>11555<br>11555<br>11555<br>11555<br>11555<br>11555<br>11555<br>11555<br>11555<br>11555<br>11555<br>11555<br>11555<br>11555<br>11555<br>11555<br>11555<br>11555<br>11555<br>11555<br>11555<br>11555<br>115555<br>11555<br>115555<br>11555<br>115555<br>11555  | 5         978           3         2388           2         624           7         945           5         441           3         2535           2         441           4         657           3         2358           7         1914           9         486           9         642           2         747           8         1896           5         864   | (·)<br>(·)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+   | 99.692<br>99.748<br>96.135<br>99.682<br>99.682<br>99.485<br>99.485<br>99.315<br>99.156<br>98.165<br>98.599<br>100<br>99.379<br>98.355<br>100<br>99.194<br>99.842<br>99.652   
  | minimum         minimum         minimum           minimum         minimum <td< th=""><th>(·)           (·)</th><th>99.385<br/>99.623<br/>98.544<br/>99.682<br/>97.945<br/>99.289<br/>99.315<br/>99.156<br/>97.706<br/>99.236<br/>99.236<br/>100<br/>99.379<br/>99.013<br/>100<br/>99.597<br/>99.842<br/>100</th><th>SweH2-107<br/>SweH2-107<br/>SweH2-108<br/>SweH2-110<br/>SweH2-110<br/>SweH2-110<br/>SweH2-110<br/>SweH2-111<br/>SweH2-112<br/>SweH2-115<br/>SweH2-115<br/>SweH2-115<br/>SweH2-117<br/>SweH2-120<br/>SweH2-120<br/>SweH2-120<br/>SweH2-121<br/>SweH2-121</th><th>102147<br/>103318<br/>104296<br/>106869<br/>107490<br/>108472<br/>108955<br/>111448<br/>1112594<br/>1112594<br/>1112594<br/>1112594<br/>1112594<br/>1112594<br/>1112594<br/>1112594<br/>1112594<br/>1112594<br/>1112594<br/>112594<br/>112593<br/>112593<br/>112593<br/>112593<br/>112593<br/>112593<br/>112593<br/>112593<br/>112593<br/>112593<br/>112593<br/>112593<br/>112593<br/>112593<br/>112593<br/>112593<br/>112593<br/>112593<br/>112593<br/>112593<br/>112593<br/>112593<br/>112593<br/>112593<br/>112593<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>112594<br/>11259</th><th>104295           104295           106683           107489           108434           108912           111489           1112594           113250           115639           117593           118105           118982           1120404           1220408           123201</th><th>978           978           2388           621           945           441           2535           441           2535           441           2535           441           2535           441           657           2358           1914           486           915           642           747           1896           864</th><th><math>(\cdot)</math><br/><math>(\cdot)</math><br/><math>(\cdot)</math><br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)<br/>(-)</th><th>99.385<br/>99.623<br/>98.544<br/>99.682<br/>99.682<br/>99.9315<br/>99.156<br/>97.706<br/>99.379<br/>99.156<br/>100<br/>99.379<br/>100<br/>99.379<br/>100<br/>99.597<br/>99.842<br/>100</th></td<> | (·)             
   
  | 99.385<br>99.623<br>98.544<br>99.682<br>97.945<br>99.289<br>99.315<br>99.156<br>97.706<br>99.236<br>99.236<br>100<br>99.379<br>99.013<br>100<br>99.597<br>99.842<br>100  
   | SweH2-107<br>SweH2-107<br>SweH2-108<br>SweH2-110<br>SweH2-110<br>SweH2-110<br>SweH2-110<br>SweH2-111<br>SweH2-112<br>SweH2-115<br>SweH2-115<br>SweH2-115<br>SweH2-117<br>SweH2-120<br>SweH2-120<br>SweH2-120<br>SweH2-121<br>SweH2-121  |
102147<br>103318<br>104296<br>106869<br>107490<br>108472<br>108955<br>111448<br>1112594<br>1112594<br>1112594<br>1112594<br>1112594<br>1112594<br>1112594<br>1112594<br>1112594<br>1112594<br>1112594<br>112594<br>112593<br>112593<br>112593<br>112593<br>112593<br>112593<br>112593<br>112593<br>112593<br>112593<br>112593<br>112593<br>112593<br>112593<br>112593<br>112593<br>112593<br>112593<br>112593<br>112593<br>112593<br>112593<br>112593<br>112593<br>112593<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>112594<br>11259   | 104295           104295           106683           107489           108434           108912           111489           1112594           113250           115639           117593           118105           118982           1120404           1220408           123201   | 978           978           2388           621           945           441           2535           441           2535           441           2535           441           2535           441           657           2358           1914           486           915           642           747           1896           864  |
$(\cdot)$<br>$(\cdot)$<br>$(\cdot)$<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-)<br>(-) | 99.385<br>99.623<br>98.544<br>99.682<br>99.682<br>99.9315<br>99.156<br>97.706<br>99.379<br>99.156<br>100<br>99.379<br>100<br>99.379<br>100<br>99.597<br>99.842<br>100   |
| INV hepath bilding surface protein (Cop-HSL)<br>RAP84 (RNA pal assoc praticing (Cop-HSL)<br>RAP84 (RNA pal assoc praticing (Cop-HSL)<br>UTT-4 (late transport for factor 4/ Cop-HSR)<br>OPVA-116<br>Viral membrane assembly proteins (VMAP) (Cop-HT R)<br>afRNA copping cravme large submit (Cop-D1R)<br>Virina core (Cop-D2R)<br>Virina core (Cop-D3R)<br>Morphogenesis, VETT- 4 conft transcription fact or small) (Cop-D4R)<br>RCNA polymerase submit (RVD18) (Cop-U7R)<br>Carbonic anglycase, CAG-Holing INV membrane pr otein (Cop-D4R)<br>MRNA decapting compare (Cop-D7R)<br>MRNA decapting compare (Cop-D7R)<br>ATPase, NPH1 (Cop-D11R)<br>MRNA copping cravme (Cop-D2R)<br>MRNA cop-D110<br>MRNA copping cravme (Cop-D2R)<br>MRNA copping cravme (Cop-D2R)<br>MR   | H3L<br>H4L<br>H5R<br>H6R<br>D1R<br>D1R<br>D2L<br>D3R<br>D4R<br>D5R<br>D6R<br>D7R<br>D6R<br>D7R<br>D8L<br>D9R<br>D10R<br>D11L<br>D12L<br>-   | CIX111<br>CIX111<br>CIX111<br>CIX1113<br>CIX1114<br>CIX1114<br>CIX1116<br>CIX1116<br>CIX1116<br>CIX1116<br>CIX1116<br>CIX1116<br>CIX1116<br>CIX1116<br>CIX1117<br>CIX1116<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX117<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17<br>CIX17 | NoFi-108         10372-10           NoFi-108         10372-10           NoFi-108         10372-10           NoFi-110         107274-10           NoFi-111         10728-10           NoFi-113         107895-10           NoFi-113         107895-10           NoFi-114         107895-10           NoFi-113         10386-11           NoFi-114         103885-11           NoFi-115         12287           NoFi-115         12287           NoFi-115         12287           NoFi-115         12287           NoFi-115         12287           NoFi-116         10300-11           NoFi-118         10300-11           NoFi-124         10302-11           NoFi-124         10302-11           NoFi-124         10302-11           NoFi-124         10302-11           NoFi-124         10302-11           NoFi-124         10302-11           NoFi-124         10305-12           NoFi-124         12744-12           Oreit-124         12744-12           Oreit-125         12638-12   
   
   
  | 120         570           120         978           120         978           120         978           120         978           121         945           123         945           123         945           124         945           125         224           441         985           232         234           441         000           714         656           657         701           642         2358           114         486           0711         642           814         747           710         1896           6077         864           293         1656   
   
  | (c)           (c)           (e)           (f)           (e)           (f)   | 36,342           99,385          
99,623           93,782           99,682           98,663           99,315           99,156           98,165           98,165           98,165           99,379           97,368           100           99,194           99,194           99,652           99,637   | M02-101         (M02, M04, M04, M04, M04, M04, M04, M04, M04  
   
   | 200         (-)           208         (-)           288         (-)           624         (+)           624         (+)           945         (+)           441         (-)           714         (+)           2338         (+)           2338         (+)           214         (+)           2338         (+)           915         (-)           642         (+)           747         (+)           1896         (-)           1656         (-)  
   | 99,6%<br>99,6%<br>99,74<br>99,68<br>99,74<br>99,98<br>99,98<br>99,94<br>99,94<br>99,94<br>99,94<br>99,94<br>99,10<br>99,10<br>99,10<br>99,10<br>99,10<br>99,94<br>99,94<br>50<br>99,45   | Norm-100           Norm-100           Norm-108           Norm-108           Norm-108           Norm-108           Norm-108           Norm-101           Norm-102           Norm-102           Norm-102           Norm-102           Norm-103           Norm-103           Norm-104           Norm-102           Norm-103           Norm-103           Norm-104   
   
  | 1001218 105132<br>1005126 107522<br>107709 108333 10927<br>109335 109757<br>109335 109757<br>109335 109757<br>112725 113433<br>112428 11409<br>112524 118437<br>118464 118942<br>119822 119822<br>119828 12050<br>119524 118437<br>118464 118942<br>119828 12050<br>119524 118437<br>118464 118942<br>119828 12050<br>119828 12050<br>121253 123444<br>123182 124045  | 5         978           3         2388           2         624           7         945           5         441           3         2535           2         441           3         2535           2         441           8         714           9         486           6         915           9         642           2         747           8         1896           5         864  | (.)<br>(.)<br>(.)<br>(.)<br>(.)<br>(.)<br>(.)<br>(.)<br>(.)<br>(.)  | 99.692<br>99.748<br>96.135<br>99.682<br>99.488<br>99.408<br>99.315<br>99.156<br>98.165<br>98.165<br>98.599<br>100<br>99.379<br>99.375<br>100<br>99.379<br>99.842<br>99.652  
   | mini-no         1000-01 <t< th=""><th>(·)           (·)</th><th>100<br/>99385<br/>99385<br/>99623<br/>98544<br/>99.882<br/>97.945<br/>99.289<br/>99.315<br/>99.315<br/>99.236<br/>100<br/>99.379<br/>99.013<br/>100<br/>99.597<br/>99.842<br/>100</th><th>SweH2:107           SweH2:107           SweH2:107           SweH2:108           SweH2:109           SweH2:110           SweH2:111           SweH2:111           SweH2:111           SweH2:111           SweH2:111           SweH2:113           SweH2:113           SweH2:115           SweH2:117           SweH2:117           SweH2:118           SweH2:119           SweH2:121           SweH2:121           SweH2:121           SweH2:122           SweH2:123           SweH2:123</th><th>102747<br/>10318<br/>104296<br/>106869<br/>107490<br/>108472<br/>108955<br/>111448<br/>111881<br/>112594<br/>113282<br/>115680<br/>117620<br/>118068<br/>119024<br/>119062<br/>122338</th><th>104295<br/>104295<br/>106683<br/>107489<br/>108434<br/>108912<br/>111489<br/>111888<br/>112594<br/>113250<br/>115639<br/>117593<br/>118105<br/>11805<br/>11805<br/>11805<br/>11805<br/>11805<br/>11805<br/>11805<br/>120408<br/>122304<br/>123201</th><th>978           978           2388           621           945           441           2535           441           714           657           2358           1914           486           915           642           747           1896           864           1656</th><th>(·)           (·)</th><th>99.385<br/>99.623<br/>98.544<br/>99.962<br/>99.9682<br/>99.289<br/>99.315<br/>99.156<br/>99.236<br/>100<br/>99.236<br/>100<br/>99.236<br/>100<br/>99.236<br/>100<br/>99.013<br/>100<br/>99.507<br/>99.507<br/>99.507<br/>99.507<br/>99.842<br/>100</th></t<>  
  | (·)            
   | 100<br>99385<br>99385<br>99623<br>98544<br>99.882<br>97.945<br>99.289<br>99.315<br>99.315<br>99.236<br>100<br>99.379<br>99.013<br>100<br>99.597<br>99.842<br>100  
  | SweH2:107           SweH2:107           SweH2:107           SweH2:108           SweH2:109           SweH2:110           SweH2:111           SweH2:111           SweH2:111           SweH2:111           SweH2:111           SweH2:113           SweH2:113           SweH2:115           SweH2:117           SweH2:117           SweH2:118           SweH2:119           SweH2:121           SweH2:121           SweH2:121           SweH2:122           SweH2:123           SweH2:123   |
102747<br>10318<br>104296<br>106869<br>107490<br>108472<br>108955<br>111448<br>111881<br>112594<br>113282<br>115680<br>117620<br>118068<br>119024<br>119062<br>122338  | 104295<br>104295<br>106683<br>107489<br>108434<br>108912<br>111489<br>111888<br>112594<br>113250<br>115639<br>117593<br>118105<br>11805<br>11805<br>11805<br>11805<br>11805<br>11805<br>11805<br>120408<br>122304<br>123201  | 978           978           2388           621           945           441           2535           441           714           657           2358           1914           486           915           642           747           1896           864           1656  | (·)             
  | 99.385<br>99.623<br>98.544<br>99.962<br>99.9682<br>99.289<br>99.315<br>99.156<br>99.236<br>100<br>99.236<br>100<br>99.236<br>100<br>99.236<br>100<br>99.013<br>100<br>99.507<br>99.507<br>99.507<br>99.507<br>99.842<br>100   |
| INV Repath billing surface protein (Cop-HSL)           RAP4 (RX) pal assoc protein (Cop-HSL)           RAP4 (RX) pal assoc protein (Cop-HSL)           DNA toposisemerase type I (Cop-HSR)           CVP-8-116           BTA capting encyclip indicet -1 (Cop-HSR)           CVP-8-116           BTA capting encyclip indicet -1 (Cop-HSR)           Miral membrane assembly proteins (VMAP) (Cop-HT R)           BTA capting encyclip indicet -1 (Cop-DIR)           Virian core (Cop-DSR)           Miral nore (Cop-DSR)           Marphageneins', VETTS (enryl transcription fact or small) (Cop-D6R)           RNA apping encyclip indicet or small) (Cop-D6R)           RNA acypting enzyme (Cop-DFR)           Miral Association (Cop-DSR)           Marphageneins', VETTS (enryl transcription fact or small) (Cop-D6R)           RNA acypting enzyme (Cop-DFR)           MirA accupting enzyme (Cop  | HSL<br>HHL<br>HHR<br>HRR<br>DIR<br>DIR<br>DIR<br>DJR<br>DAR<br>DAR<br>DAR<br>DAR<br>DAR<br>DAR<br>DIR<br>DIR<br>DIR<br>DIR<br>DIL<br>DIL<br>DIL<br>DIL<br>DIL<br>ALL  | CIXVII2<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII  | NoF-10         NoF-10         NoF-10           NoF-10         NoF-10         NoF-10         NoF-10           NoF-10         NoF-10         NoF-10         NoF-10           NoF-10         NoF-10         NoF-10         NoF-10           NoF-10         NoF-10         NoF-10         NoF-10           NoF-110         NoF-110         NoF-110         NoF-110           NoF-111         11050         11         NoF-111         NoF-116           NoF-111         11000         11         NoF-111         11000         11           NoF-111         11000         11         1000         11         NoF-111         11000         11           NoF-111         11000         11         1000         11         NoF-112         1000         11           NoF-112         1000         11         1000         11         NoF-112         1000         11           NoF-12         1000         11         1000         11         NoF-12         1000         11           NoF-12         1000         11         1000         11         1000         11         1000         11           NoF-12         1000         11         100   
   
   
   | 120         5.10           120         9.78           120         9.78           120         9.78           120         9.78           120         9.78           120         9.78           1317         441           1317         441           1495         25.35           1317         441           455         657           000         714           456         657           045         2558           999         1914           451         486           588         915           071         642           814         747           710         18%           607         864           29.3         1656           709         453  
   
   
   | (·)             | 99.385           99.385           99.623           99.682           99.682           99.682           99.682           99.156           99.155           98.165           98.165           98.379           100           99.482           99.682           99.379           99.379           99.379           99.484           99.652           99.652  | Mar 210         (Mod2)         (Mod2)           Mar 2110         (Mod2)         (Mod2)           Mar 2111         (Mod2)         (Mod2)           Mar 2112         (Mod2)         (Mod2)           Mar 2113         (Mod2)         (Mod2)           Mar 2114         (Mod2)         (Mod2)           Mar 2115         (Mod2)         (Mod2)           Mar 2116         (Mod2)         (Mod2)           Mar 2118         (Mod2)         (Mod2)           Mar 2118         (Mod3)         (Mod2)           Mar 2118         (Mod3)         (Mod2)           Mar 2118         (Mod3)         (Mod3)           Mar 2120         (Mod3)         (Mod3)           Mar 2121         (Mod3)         (Mod3)   
   
  | $\begin{array}{cccc} 200 & (c) \\ 278 & (c) \\ 288 & (c) \\ 945 & (c) \\ 945 & (c) \\ 2355 & (c) \\ 441 & (c) \\ 2355 & (c) \\ 441 & (c) \\ 2455 & (c) \\ 441 & (c) \\ 2458 & (c) \\ 1914 & (c) \\ 191$   |
99.6%<br>99.6%<br>99.74<br>99.74<br>99.74<br>99.74<br>99.90<br>99.97<br>99.97<br>99.75<br>98.16<br>98.57<br>100<br>99.37<br>98.75<br>100<br>99.37<br>99.37<br>100<br>99.37<br>100<br>99.38<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>10  | Norm-100           Norm-100 <t< th=""><th>1041210118110513100126<br/>1041581105136<br/>104581105136<br/>1045810513310052<br/>100709110833310927<br/>10931510927<br/>112323110927<br/>1123221127511343311409<br/>1123221127511343311409<br/>1141261118446111844<br/>118912119822<br/>119828<br/>112414<br/>118461118446111844<br/>118912119822<br/>119828<br/>12050612125312314<br/>12125312314123182<br/>124441<br/>12318212444<br/>124076112573512620</th><th>5         978           3         2388           2         624           7         945           5         441           3         2535           2         441           3         2535           2         441           4         657           3         2358           7         1948           6         915           9         486           6         915           9         486           5         864           1         1656           7         453</th><th>()<br/>()<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+</th><th>99.692<br/>99.748<br/>96.135<br/>99.682<br/>99.488<br/>99.488<br/>99.315<br/>99.408<br/>99.315<br/>99.156<br/>98.165<br/>98.165<br/>98.165<br/>98.599<br/>100<br/>99.379<br/>99.379<br/>99.375<br/>100<br/>99.522</th><th>accellation         105:60         976           accellation         106:10         106:10         106:10           accellation         106:10         106:10         106:10           accellation         106:10         106:10         106:10           accellation         106:00:10         208:10         106:00:10           accellation         106:00:10         208:10         106:00:10         106:10           accellation         106:00:10         106:00:10         40:10         106:10:10         106:10:10         106:10:10:10:10:10:10:10:10:10:10:10:10:10:</th><th>(·)<br/>(·)<br/>(·)<br/>(·)<br/>(·)<br/>(·)<br/>(·)<br/>(·)<br/>(·)<br/>(·)</th><th>99.385<br/>99.623<br/>99.623<br/>99.624<br/>99.682<br/>97.945<br/>99.289<br/>99.289<br/>99.156<br/>97.706<br/>99.236<br/>100<br/>99.236<br/>100<br/>99.379<br/>99.013<br/>100<br/>99.542<br/>100</th><th>SweH2-107<br/>SweH2-107<br/>SweH2-108<br/>SweH2-110<br/>SweH2-110<br/>SweH2-112<br/>SweH2-112<br/>SweH2-112<br/>SweH2-114<br/>SweH2-115<br/>SweH2-116<br/>SweH2-116<br/>SweH2-117<br/>SweH2-120<br/>SweH2-120<br/>SweH2-120<br/>SweH2-120<br/>SweH2-120<br/>SweH2-121<br/>SweH2-121<br/>SweH2-121<br/>SweH2-124<br/>SweH2-124<br/>SweH2-124<br/>SweH2-124</th><th>102/47<br/>103318<br/>104296<br/>106869<br/>107490<br/>108472<br/>108955<br/>111448<br/>111881<br/>112594<br/>113282<br/>115680<br/>117620<br/>118068<br/>119024<br/>119662<br/>120409<br/>122338<br/>1224911</th><th>104295<br/>106683<br/>107489<br/>108434<br/>108912<br/>111489<br/>111489<br/>111888<br/>112594<br/>113250<br/>115639<br/>117593<br/>118105<br/>120408<br/>122304<br/>12304<br/>12304<br/>12304<br/>124887<br/>125363</th><th>978<br/>978<br/>2388<br/>621<br/>945<br/>441<br/>2535<br/>441<br/>714<br/>2535<br/>441<br/>714<br/>657<br/>2358<br/>1914<br/>486<br/>915<br/>642<br/>747<br/>1896<br/>864<br/>1656<br/>453</th><th>(c)<br/>(c)<br/>(c)<br/>(c)<br/>(c)<br/>(c)<br/>(c)<br/>(c)<br/>(c)<br/>(c)</th><th>99.385<br/>99.623<br/>99.623<br/>99.624<br/>99.682<br/>99.289<br/>99.289<br/>99.155<br/>97.706<br/>99.236<br/>100<br/>99.379<br/>99.013<br/>100<br/>99.597<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.819<br/>98.667</th></t<>  
   
  | 1041210118110513100126<br>1041581105136<br>104581105136<br>1045810513310052<br>100709110833310927<br>10931510927<br>112323110927<br>1123221127511343311409<br>1123221127511343311409<br>1141261118446111844<br>118912119822<br>119828<br>112414<br>118461118446111844<br>118912119822<br>119828<br>12050612125312314<br>12125312314123182<br>124441<br>12318212444<br>124076112573512620  | 5         978           3         2388           2         624           7         945           5         441           3         2535           2         441           3         2535           2         441           4         657           3         2358           7         1948           6         915           9         486           6         915           9         486           5         864           1         1656           7         453  | ()<br>()<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+  | 99.692<br>99.748<br>96.135<br>99.682<br>99.488<br>99.488<br>99.315<br>99.408<br>99.315<br>99.156<br>98.165<br>98.165<br>98.165<br>98.599<br>100<br>99.379<br>99.379<br>99.375<br>100<br>99.522  
   | accellation         105:60         976           accellation         106:10         106:10         106:10           accellation         106:10         106:10         106:10           accellation         106:10         106:10         106:10           accellation         106:00:10         208:10         106:00:10           accellation         106:00:10         208:10         106:00:10         106:10           accellation         106:00:10         106:00:10         40:10         106:10:10         106:10:10         106:10:10:10:10:10:10:10:10:10:10:10:10:10:   | (·)<br>(·)<br>(·)<br>(·)<br>(·)<br>(·)<br>(·)<br>(·)<br>(·)<br>(·)   
   
   | 99.385<br>99.623<br>99.623<br>99.624<br>99.682<br>97.945<br>99.289<br>99.289<br>99.156<br>97.706<br>99.236<br>100<br>99.236<br>100<br>99.379<br>99.013<br>100<br>99.542<br>100  
  | SweH2-107<br>SweH2-107<br>SweH2-108<br>SweH2-110<br>SweH2-110<br>SweH2-112<br>SweH2-112<br>SweH2-112<br>SweH2-114<br>SweH2-115<br>SweH2-116<br>SweH2-116<br>SweH2-117<br>SweH2-120<br>SweH2-120<br>SweH2-120<br>SweH2-120<br>SweH2-120<br>SweH2-121<br>SweH2-121<br>SweH2-121<br>SweH2-124<br>SweH2-124<br>SweH2-124<br>SweH2-124   | 102/47<br>103318<br>104296<br>106869<br>107490<br>108472<br>108955<br>111448<br>111881<br>112594<br>113282<br>115680<br>117620<br>118068<br>119024<br>119662<br>120409<br>122338<br>1224911  
   | 104295<br>106683<br>107489<br>108434<br>108912<br>111489<br>111489<br>111888<br>112594<br>113250<br>115639<br>117593<br>118105<br>120408<br>122304<br>12304<br>12304<br>12304<br>124887<br>125363  | 978<br>978<br>2388<br>621<br>945<br>441<br>2535<br>441<br>714<br>2535<br>441<br>714<br>657<br>2358<br>1914<br>486<br>915<br>642<br>747<br>1896<br>864<br>1656<br>453   | (c)<br>(c)<br>(c)<br>(c)<br>(c)<br>(c)<br>(c)<br>(c)<br>(c)<br>(c)   |
99.385<br>99.623<br>99.623<br>99.624<br>99.682<br>99.289<br>99.289<br>99.155<br>97.706<br>99.236<br>100<br>99.379<br>99.013<br>100<br>99.597<br>99.842<br>100<br>99.842<br>100<br>99.819<br>98.667  |
| INV Repath billing surface protein (Cop-HSL) RAP94 (RA) pal assoc protein (Cop-HSL) (Cop-HSL) INT-4 (tate transcription factor 47 (Cop-HSL) INT-4 (RA) pal assoc protein (Cop-HSR) (CPV-4-116 (CPV-4-  | H3L<br>H4L<br>H5R<br>H6R<br>D1R<br>D2L<br>D3R<br>D3R<br>D4R<br>D5R<br>D5R<br>D5R<br>D5R<br>D5R<br>D5R<br>D5R<br>D7R<br>D10R<br>D10R<br>D10R<br>D10R<br>D10R<br>D10L<br>D12L<br>D13L<br>ALL  | CTXVII2<br>CTXVII2<br>CTXVII2<br>CTXVII4<br>CTXVII4<br>CTXVII6<br>CTXVII6<br>CTXVII6<br>CTXVI16<br>CTXVI16<br>CTXVI17<br>CTXVI20<br>CTXVI22<br>CTXVI22<br>CTXVI22<br>CTXVI22<br>CTXVI22<br>CTXVI23<br>CTXVI25<br>CTXVI25<br>CTXVI26<br>CTXVI26<br>CTXVI26<br>CTXVI26<br>CTXVI26<br>CTXVI26<br>CTXVI26<br>CTXVI26<br>CTXVI26<br>CTXVI26<br>CTXVI26<br>CTXVI26<br>CTXVI26<br>CTXVI26<br>CTXVI26<br>CTXVI27<br>CTXVI26<br>CTXVI26<br>CTXVI26<br>CTXVI26<br>CTXVI27<br>CTXVI26<br>CTXVI26<br>CTXVI26<br>CTXVI26<br>CTXVI26<br>CTXVI26<br>CTXVI26<br>CTXVI27<br>CTXVI26<br>CTXVI27<br>CTXVI26<br>CTXVI26<br>CTXVI27<br>CTXVI26<br>CTXVI27<br>CTXVI26<br>CTXVI27<br>CTXVI26<br>CTXVI27<br>CTXVI26<br>CTXVI27<br>CTXVI26<br>CTXVI27<br>CTXVI26<br>CTXVI27<br>CTXVI26<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI27<br>CTXVI7  | NoF-10         1037-10           NoF-100         103723           NoF-100         103723           NoF-100         103723           NoF-110         107274           NoF-111         107895           NoF-111         107895           NoF-111         107895           NoF-111         107895           NoF-111         107895           NoF-115         112871           NoF-115         112871           NoF-115         112871           NoF-111         103895           NoF-111         103895           NoF-111         103895           NoF-111         103001           NoF-112         103871           NoF-113         103001           NoF-121         103002           NoF-121         103002           NoF-122         103051           NoF-122         103051           NoF-122         103052           NoF-122         120351           NoF-122         120351           NoF-122         120351           NoF-122         120351           NoF-123         123539           NoF-124         123539  
   
   
   | 120         570           120         978           120         978           120         978           120         978           121         441           1237         441           120         714           656         657           121         441           120         2358           999         1914           511         486           636         657           121         484           710         1896           607         642           293         1656           769         453           446         675  
   
   | (·)             | 36,342           99,385           99,623           93,782           99,682           98,63           99,531           99,315           99,315           99,315           99,315   
       99,315           99,316           99,379           97,368           100           99,194           99,682           99,682           99,194           99,652           99,637           100           99,637           100   | M02-101         (M02, M04, M04, M04, M04, M04, M04, M04, M04   
   
  | 200         (-)           2038         (-)           624         (-)           624         (-)           945         (-)           441         (-)           1945         (+)           441         (-)           714         (+)           2338         (+)           1914         (+)           2338         (+)           1914         (+)           915         (-)           945         (+)           915         (-)           945         (-)           864         (-)           1656         (-)           1656         (-)           1656         (-)           1655         (-)  
  | 99,657<br>99,679<br>99,744<br>99,613<br>99,66,13<br>99,96,13<br>99,915<br>99,915<br>99,915<br>99,915<br>99,915<br>99,915<br>99,915<br>99,915<br>99,955<br>99,65<br>99,65<br>99,65<br>99,65<br>99,65<br>99,65<br>99,65<br>99,65<br>90,65<br>99,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65<br>90,65  | NaH1-107           NaH1-107           NaH1-108           NaH1-108           NaH1-108           NaH1-108           NaH1-101           NaH1-110           NaH1-110           NaH1-110           NaH1-110           NaH1-111           NaH1-114           NaH1-114           NaH1-114           NaH1-117           NaH1-118           NaH1-117           NaH1-118           NaH1-117           NaH1-121           NaH1-121           NaH1-123           NaH1-124           NaH1-124           NaH1-124           NaH1-124           NaH1-125           NaH1-126           NaH1-126           NaH1-126           NaH1-126           NaH1-126  
   
   | 1001218 105131<br>1005136 10752<br>107709 108333 10927<br>109315 109755<br>109709 1123333 10927<br>109315 109755<br>112323 112333 109757<br>112725 113433<br>112428 11409<br>112425 11443<br>115454 118944<br>115524 118454<br>118544 118944<br>118954 118454<br>118954 11855<br>118685 120505<br>120555 12020<br>120555 12020   | 5         978           3         2388           2         624           7         945           5         441           3         2535           2         441           8         714           4         657           3         2338           7         1914           9         642           9         642           2         747           8         1896           5         864           1         16556           7         453           2         675   | (·)<br>(·)<br>(·)<br>(·)<br>(·)<br>(·)<br>(·)<br>(·)<br>(·)<br>(·)  | 99.692<br>99.748<br>96.135<br>99.682<br>99.682<br>99.408<br>99.315<br>99.156<br>99.156<br>98.595<br>100<br>99.379<br>99.942<br>99.652<br>99.637<br>100<br>100   
   | memory in the second   | (·)            
   
   | 99385<br>99385<br>99623<br>98544<br>99682<br>97945<br>99289<br>99315<br>99289<br>99379<br>99236<br>100<br>99236<br>100<br>99379<br>99379<br>99379<br>99379<br>993819<br>99819<br>99819<br>998819<br>100   
  | SweH2:107           SweH2:107           SweH2:107           SweH2:108           SweH2:110           SweH2:110           SweH2:111           SweH2:111           SweH2:111           SweH2:113           SweH2:113           SweH2:114           SweH2:116           SweH2:116           SweH2:116           SweH2:117           SweH2:118           SweH2:110           SweH2:121           SweH2:121           SweH2:122           SweH2:123           SweH2:124           SweH2:125           SweH2:125           SweH2:125           SweH2:125   | 102/47<br>10318<br>104296<br>106869<br>107490<br>108955<br>107490<br>108955<br>111448<br>11881<br>112541<br>113282<br>115580<br>115580<br>115580<br>115680<br>115680<br>115680<br>1120384<br>19024<br>122384   
   | 104295           104295           106683           107489           108912           111489           112594           113250           115639           117593           118105           118982           119665           120408           123201           124887           125363           126058  | 978<br>978<br>2388<br>621<br>945<br>441<br>2535<br>441<br>714<br>2535<br>441<br>714<br>657<br>2358<br>1914<br>486<br>915<br>642<br>747<br>1896<br>864<br>1656<br>453<br>675  | (c)<br>(c)<br>(c)<br>(c)<br>(c)<br>(c)<br>(c)<br>(c)<br>(c)<br>(c)   | 99.385<br>99.623<br>98.642<br>99.682<br>99.682<br>99.289<br>99.315<br>99.156<br>99.236<br>100<br>99.236<br>199.236<br>100<br>100<br>99.819<br>99.819<br>99.819   
  |
| INV hepathioling under protein (Cop-HSL)           RAP4 (RX) pal assoc protein (Cop-HSL)           RAP4 (RX) pal assoc protein (Cop-HSL)           DNA toposisemera: type 1 (Cop-HSR)           (CYV-8-116           WY-8-116           MRN capping come large schwalt (Cop-HSR)           Wrian core (Cop-DSR)           Wrinn core (Cop-DSR)           Wrinn core (Cop-DSR)           Wrinn core (Cop-DSR)           Morphagenesis, VALPS (cop-HSR)           Wrinn core (Cop-DSR)           Morphagenesis, VETA (cort transcription flate 4-1 (cop-DIR)           Wrinn core (Cop-DSR)           Marphagenesis, VETA (cort transcription flate 4-1 (cop-DGR)           RNA acpting core, Gol-PDSR)           Marphagenesis, VETA (cort transcription flate 4-1 (cop-DGR)           RNA acpting core, Gol-PDBR)           MRNA decopting core, Gol-PDBR)           MRNA decopting core, Such advant (Cop-D1R)           ATPase, NFH1 (Cop-D1B1)           MRNA decopting core, Such advant (Cop-D12).           VY, Tarasticona 6.           WITF-2 (abst transcription flater 2) (Cop-D12).           VY, Tarasticona 6.           WITF-2 (abst transcription flater 2) (Cop-D12).           VITF-2 (abst transcription flater 2) (Cop-D12).           VITF-2 (abst transcription flater 2) (Cop-D12).           V  | IK1           IHL           IHR           IFR           IFR           DIR           DIR           DIR           DSR           DAR           DFR           DR           DFR           DR           DFR           DIR           AIL           A2SL  | CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL  | NoF-10         1037-10           NoF-100         103723           NoF-100         103723           NoF-100         103723           NoF-110         103723           NoF-1110         107244           NoF-1111         107574           NoF-1111         107585           NoF-1112         105871           NoF-1112         105871           NoF-1114         111554           NoF-115         112871           NoF-114         111554           NoF-115         112807           NoF-111         110800           NoF-111         110800           NoF-112         118474           NoF-120         118474           NoF-121         118474           NoF-122         120815           NoF-122         120815           NoF-122         120815           NoF-122         120815           NoF-122         120815           NoF-122         123815           NoF-122         123815           NoF-122         123815           NoF-122         123815           NoF-122         123815           NoF-122         123817 <th>120         5.70           120         5.70           00         978           100         978           100         978           101         894           102         2535           103         7           11         895           123         2535           124         441           125         254           144         895           123         258           1299         1914           456         657           124         441           000         714           486         388           915         071           643         071           643         675           6769         453           464         675           678         453</th> <th>(c)           (c)           (c)</th> <th>36,342           99,385           99,623           99,385           99,623           99,782           99,526           99,515           99,515           99,155           98,599           100           99,378           100           99,842           99,652           99,652           99,653           100           100           98,641</th> <th>Nur_210         (Moz) (Moz)           Nur_210         (Moz)           Nur_210         (Moz)           Nur_210         (Moz)           Nur_210         (Moz)           Nur_2110         (Moz)           Nur_2111         (Moz)           Nur_2112         (Moz)           Nur_2113         (Moz)           Nur_2114         (1235)           Nur_2114         (1236)           Nur_2115         (1666)           Nur_2114         (1408)           Nur_2115         (1666)           Nur_2116         (1808)           Nur_2112         (1408)           Nur_2112         (1408)           Nur_2112         (1408)           Nur_2112         (1408)           Nur_2112         (1408)           Nur_2121         (140</th> <th>200         (-)           208         (-)           2388         (-)           945         (+)           945         (+)           441         (-)           2355         (+)           441         (-)           2355         (+)           441         (-)           2355         (+)           945         (+)           1914         (+)           915         (-)           642         (+)           915         (-)           864         (-)           1666         (-)           675         (-)           675         (-)           234         (-)</th>
<th>99,65<br/>99,67<br/>99,74<br/>99,74<br/>99,74<br/>99,74<br/>99,74<br/>99,75<br/>99,55<br/>99,55<br/>100<br/>99,57<br/>100<br/>99,57<br/>100<br/>99,57<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>99,55<br/>100<br/>90,55<br/>100<br/>90,55<br/>100<br/>90,55<br/>100<br/>90,55<br/>100<br/>90,55<br/>100<br/>90,55<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>1</th> <th>Nath:100           Nath:101           Nath:108           Nath:108           Nath:108           Nath:109           Nath:101           Nath:101           Nath:101           Nath:101           Nath:101           Nath:110           Nath:115           Nath:115           Nath:115           Nath:115           Nath:115           Nath:115           Nath:115           Nath:115           Nath:121           Nath:122           Nath:123           Nath:123           Nath:124           Nath:125           Nath:124           Nath:125</th> <th>10112101130 [10112]<br/>101126 [10113]<br/>101126 [10752]<br/>101126 [10752]<br/>1012136 [10752]<br/>1012136 [10752]<br/>1012131 [10122]<br/>101221 [10123]<br/>101221 [10123]<br/>101212 [10123]<br/>10121 [10123]<br/>101212 [10123]<br/>101212</th> <th>5         978           3         2388           2         624           7         945           5         441           3         2528           2         441           3         2538           2         441           3         2537           3         2388           2         441           8         714           4         657           3         2388           7         1914           9         486           6         915           9         642           2         747           8         1896           5         864           1         1656           7         453           2         674           2         234</th> <th>()<br/>()<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+</th> <th>99.692<br/>99.748<br/>96.135<br/>99.682<br/>99.682<br/>99.408<br/>99.408<br/>99.408<br/>99.408<br/>99.408<br/>99.408<br/>99.408<br/>99.408<br/>99.409<br/>99.559<br/>100<br/>99.379<br/>100<br/>99.842<br/>99.652<br/>99.637<br/>100<br/>100<br/>89.61</th> <th>weilt-1:00         015:00         015:00         015:00           weilt-1:00         015:00         016:00         016:00           weilt-1:00         016:00         016:00         016:00           weilt-1:00         017:02         116:00         0177:22           weilt-1:01         017:01         016:00         016:00           weilt-1:02         02:02         16:00         016:00           weilt-1:02         02:02         16:00         016:00           wei</th> <th>(*)<br/>(*)<br/>(*)<br/>(*)<br/>(*)<br/>(*)<br/>(*)<br/>(*)<br/>(*)<br/>(*)</th> <th>100           99.385           99.623           99.623           99.682           97.945           97.945           99.289           99.315           99.156           97.706           99.237           99.013           100           99.597           99.842           100           99.819           98.667           100           100</th> <th>Swelf2-107<br/>Swelf2-107<br/>Swelf2-107<br/>Swelf2-108<br/>Swelf2-109<br/>Swelf2-110<br/>Swelf2-110<br/>Swelf2-112<br/>Swelf2-113<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-119<br/>Swelf2-120<br/>Swelf2-122<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-124<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115</th> <th>102/47<br/>10318<br/>104296<br/>106869<br/>107490<br/>108699<br/>107490<br/>108472<br/>108955<br/>111448<br/>111881<br/>112594<br/>113282<br/>115680<br/>118068<br/>119024<br/>119662<br/>120409<br/>122338<br/>12338<br/>12332<br/>124911<br/>125384<br/>125384</th> <th>102395<br/>106295<br/>106683<br/>107489<br/>108434<br/>108912<br/>111489<br/>111888<br/>112594<br/>113250<br/>11805<br/>118982<br/>11805<br/>118982<br/>11805<br/>118982<br/>12300<br/>122304<br/>124887<br/>12536<br/>120405<br/>126285</th> <th>978<br/>978<br/>2388<br/>621<br/>945<br/>441<br/>2535<br/>441<br/>2535<br/>441<br/>2535<br/>441<br/>714<br/>657<br/>2358<br/>1914<br/>486<br/>915<br/>642<br/>747<br/>1896<br/>864<br/>864<br/>1656<br/>453<br/>675<br/>231</th> <th>(·)           (·)</th> <th>99.385<br/>99.623<br/>99.623<br/>99.682<br/>99.884<br/>99.884<br/>99.289<br/>99.289<br/>99.289<br/>99.289<br/>99.236<br/>100<br/>99.236<br/>100<br/>99.597<br/>100<br/>99.597<br/>100<br/>99.597<br/>100</th>  
   
   | 120         5.70           120         5.70           00         978           100         978           100         978           101         894           102         2535           103         7           11         895           123         2535           124         441           125         254           144         895           123         258           1299         1914           456         657           124         441           000         714           486         388           915         071           643         071           643         675           6769         453           464         675           678         453  
   
   | (c)   | 36,342           99,385           99,623           99,385           99,623           99,782           99,526           99,515           99,515           99,155           98,599           100           99,378           100           99,842           99,652           99,652           99,653           100           100           98,641  
  | Nur_210         (Moz) (Moz)           Nur_210         (Moz)           Nur_210         (Moz)           Nur_210         (Moz)           Nur_210         (Moz)           Nur_2110         (Moz)           Nur_2111         (Moz)           Nur_2112         (Moz)           Nur_2113         (Moz)           Nur_2114         (1235)           Nur_2114         (1236)           Nur_2115         (1666)           Nur_2114         (1408)           Nur_2115         (1666)           Nur_2116         (1808)           Nur_2112         (1408)           Nur_2112         (1408)           Nur_2112         (1408)           Nur_2112         (1408)           Nur_2112         (1408)           Nur_2121         (140  
   
  | 200         (-)           208         (-)           2388         (-)           945         (+)           945         (+)           441         (-)           2355         (+)           441         (-)           2355         (+)           441         (-)           2355         (+)           945         (+)           1914         (+)           915         (-)           642         (+)           915         (-)           864         (-)           1666         (-)           675         (-)           675         (-)           234         (-)   |
99,65<br>99,67<br>99,74<br>99,74<br>99,74<br>99,74<br>99,74<br>99,75<br>99,55<br>99,55<br>100<br>99,57<br>100<br>99,57<br>100<br>99,57<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>99,55<br>100<br>90,55<br>100<br>90,55<br>100<br>90,55<br>100<br>90,55<br>100<br>90,55<br>100<br>90,55<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>1   | Nath:100           Nath:101           Nath:108           Nath:108           Nath:108           Nath:109           Nath:101           Nath:101           Nath:101           Nath:101           Nath:101           Nath:110           Nath:115           Nath:115           Nath:115           Nath:115           Nath:115           Nath:115           Nath:115           Nath:115           Nath:121           Nath:122           Nath:123           Nath:123           Nath:124           Nath:125           Nath:124           Nath:125   
   
   | 10112101130 [10112]<br>101126 [10113]<br>101126 [10752]<br>101126 [10752]<br>1012136 [10752]<br>1012136 [10752]<br>1012131 [10122]<br>101221 [10123]<br>101221 [10123]<br>101212 [10123]<br>10121 [10123]<br>101212   | 5         978           3         2388           2         624           7         945           5         441           3         2528           2         441           3         2538           2         441           3         2537           3         2388           2         441           8         714           4         657           3         2388           7         1914           9         486           6         915           9         642           2         747           8         1896           5         864           1         1656           7         453           2         674           2         234   | ()<br>()<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+  | 99.692<br>99.748<br>96.135<br>99.682<br>99.682<br>99.408<br>99.408<br>99.408<br>99.408<br>99.408<br>99.408<br>99.408<br>99.408<br>99.409<br>99.559<br>100<br>99.379<br>100<br>99.842<br>99.652<br>99.637<br>100<br>100<br>89.61   |
weilt-1:00         015:00         015:00         015:00           weilt-1:00         015:00         016:00         016:00           weilt-1:00         016:00         016:00         016:00           weilt-1:00         017:02         116:00         0177:22           weilt-1:01         017:01         016:00         016:00           weilt-1:02         02:02         16:00         016:00           weilt-1:02         02:02         16:00         016:00           wei   | (*)<br>(*)<br>(*)<br>(*)<br>(*)<br>(*)<br>(*)<br>(*)<br>(*)<br>(*)  
   
  | 100           99.385           99.623           99.623           99.682           97.945           97.945           99.289           99.315           99.156           97.706           99.237           99.013           100           99.597           99.842           100           99.819           98.667           100           100  
   | Swelf2-107<br>Swelf2-107<br>Swelf2-107<br>Swelf2-108<br>Swelf2-109<br>Swelf2-110<br>Swelf2-110<br>Swelf2-112<br>Swelf2-113<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-119<br>Swelf2-120<br>Swelf2-122<br>Swelf2-123<br>Swelf2-123<br>Swelf2-124<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115  | 102/47<br>10318<br>104296<br>106869<br>107490<br>108699<br>107490<br>108472<br>108955<br>111448<br>111881<br>112594<br>113282<br>115680<br>118068<br>119024<br>119662<br>120409<br>122338<br>12338<br>12332<br>124911<br>125384<br>125384   
  | 102395<br>106295<br>106683<br>107489<br>108434<br>108912<br>111489<br>111888<br>112594<br>113250<br>11805<br>118982<br>11805<br>118982<br>11805<br>118982<br>12300<br>122304<br>124887<br>12536<br>120405<br>126285  | 978<br>978<br>2388<br>621<br>945<br>441<br>2535<br>441<br>2535<br>441<br>2535<br>441<br>714<br>657<br>2358<br>1914<br>486<br>915<br>642<br>747<br>1896<br>864<br>864<br>1656<br>453<br>675<br>231  | (·)            | 99.385<br>99.623<br>99.623<br>99.682<br>99.884<br>99.884<br>99.289<br>99.289<br>99.289<br>99.289<br>99.236<br>100<br>99.236<br>100<br>99.597<br>100<br>99.597<br>100<br>99.597<br>100   
   |
| We hearth billing surface protein (Cop-HSL)     RAP4 (RA) pal assoc printing (Cop-HSL)     RAP4 (RA) pal assoc printing (Cop-HSL)     Wind and Cop-HSC)     DNA topositemera et type I (Cop-HSR)     (Cry-H-116     Wind memory (Cop-HSR)     (Cry-H-116     Wind memory (Cop-HSR)     (Cry-H-116     Wind memory (Cop-HSR)     Wind   | H3L<br>H4L<br>H5R<br>H6R<br>·<br>·<br>H7R<br>D1R<br>D2L<br>D3R<br>D3R<br>D3R<br>D3R<br>D4R<br>D5R<br>D5R<br>D7R<br>D4R<br>D5R<br>D7R<br>D4R<br>D5R<br>D10R<br>D10R<br>D11L<br>D12L<br>·<br>·  | CPX1112<br>CPX1112<br>CPX1113<br>CPX1114<br>CPX1115<br>CPX116<br>CPX116<br>CPX116<br>CPX116<br>CPX116<br>CPX117<br>CPX120<br>CPX121<br>CPX121<br>CPX122<br>CPX123<br>CPX123<br>CPX123<br>CPX125<br>CPX125<br>CPX124<br>CPX125<br>CPX125<br>CPX126<br>CPX125<br>CPX126<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX127<br>CPX1  | NoF-10         NoF-10         NoF-10           NoF-100         NOF-100         NOF-100         NOF-100           NoF-100         NOF-100         NOF-100         NOF-100           NoF-110         NOF-100         NOF-100         NOF-100           NoF-1110         NOF-1110         NOF-1110         NOF-1111           NOF-1111         IONSP1         IONSP1-111         IONSP1           NOF-1111         IONSP1         IONSP1-111         IONSP1           NOF-1111         IONSP1         IONSP1         IONSP1           NOF-121         IONSP1         IONSP1         IONSP1           NOF-122         IONSP1         IONSP1         IONSP1           NOF-123         IONSP1         IONSP1         IONSP1           NOF-124         IONSP1         IONSP1         IONSP1           NOF-125         IONSP1         IONSP1         IONSP1           NOF-125         IONSP1   
   
   
   | 120         5.10           120         9.78           120         9.78           120         9.78           120         9.78           121         8.39           945         2.33           937         4.41           895         2.535           224         4.41           000         714           455         6.67           045         2.538           999         1914           511         4.86           388         915           917         16.42           838         915           917         1.642           923         1.656           769         453           446         675           464         673           464         1234  
   
   | (c)   | 28,342           99,383           99,623           99,623           99,683           99,526           99,526           99,526           99,515           99,516           98,165           98,165           98,165           99,379           97,368           100           99,194           99,652           99,652           99,652           99,652           99,652           90,657           100           100           99,224  
  | Mar 210         (Mod2) (Mod2)           Mar 210         (Mod2) (Mod2)           Mar 210         (Mod2)           Mar 210         (Mod2)           Mar 210         (Mod2)           Mar 2110         (Mod2)           Mar 2111         (Mod2)           Mar 2111         (Mod2)           Mar 2112         (Mod2)           Mar 2113         (Mod2)           Mar 2114         (Mod2)           Mar 2115         (Mod2)           Mar 2111         (Mod2)           Mar 2112         (Mod2)           Mar 2113         (Mod2)           Mar 2111         (Mod2)           Mar 2112         (Mod2)           Mar 2113         (Mod2)           Mar 2114         (Mod2)           Mar 2111         (Mod2)           Mar 2112         (Mod2)           Mar 212         (Mod2)           Mar 214         (Mod2)           Mar 214         (Mod2)           Mar 214         (Mod2)           Mar 214   
   
  | $\begin{array}{cccc} & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & $   |
99,65<br>99,67<br>99,74<br>99,74<br>99,74<br>99,74<br>99,74<br>99,75<br>99,40<br>99,40<br>99,40<br>99,40<br>99,45<br>100<br>99,57<br>100<br>99,45<br>100<br>99,45<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>10   | Nath:100           Nath:101           Nath:108           Nath:108           Nath:108           Nath:108           Nath:108           Nath:108           Nath:108           Nath:110           Nath:110           Nath:111           Nath:111           Nath:114           Nath:114           Nath:115           Nath:116           Nath:117           Nath:118           Nath:118           Nath:121           Nath:121           Nath:122           Nath:123           Nath:125           Nath:125           Nath:126           Nath:126           Nath:126           Nath:126   
   
   | 1011101158 [16] 33<br>1015126 [10752]<br>1017129 [16333<br>1017129 [16333]<br>1027130 [16333]<br>1027179 [163333]<br>102727 [163333]<br>102727 [16333]<br>102727 [16333]<br>1027  | \$ 978           \$ 978           3 2388           2 624           7 95           5 441           3 2535           2 441           8 714           4 5258           3 2535           9 446           6 915           9 642           2 747           8 1886           5 864           1 1656           7 453           2 675           2 234   | (c)<br>(c)<br>(c)<br>(c)<br>(c)<br>(c)<br>(c)<br>(c)<br>(c)<br>(c)  | 99,692<br>99,748<br>96,135<br>99,682<br>97,945<br>99,082<br>99,156<br>98,155<br>98,155<br>98,155<br>98,155<br>98,155<br>98,155<br>98,155<br>98,155<br>99,154<br>99,637<br>100<br>99,637<br>100<br>99,637<br>100<br>100<br>89,612  | memory in the set of               
   | (·)<br>(·)<br>(·)<br>(·)<br>(·)<br>(·)<br>(·)<br>(·)<br>(·)<br>(·)  
   
  | 100           99.385           99.623           98.544           99.682           97.945           99.682           99.315           99.156           97.706           99.289           99.156           100           99.379           99.597           99.842           100           99.819           98.667           100           100  
   | Swelf2-107           Swelf2-107           Swelf2-108           Swelf2-108           Swelf2-109           Swelf2-111           Swelf2-111           Swelf2-111           Swelf2-111           Swelf2-111           Swelf2-111           Swelf2-118           Swelf2-118           Swelf2-118           Swelf2-118           Swelf2-112           Swelf2-123           Swelf2-123           Swelf2-125           Swelf2-125           Swelf2-125           Swelf2-126           Swelf2-127           Swelf2-128           Swelf2-128  | 102147<br>103318<br>104296<br>106869<br>107490<br>108472<br>108955<br>111448<br>1112594<br>113282<br>115680<br>117620<br>118068<br>119024<br>119062<br>122338<br>120409<br>122338<br>1224911<br>125384<br>126305   | 102395<br>106295<br>106295<br>106433<br>107489<br>108434<br>108912<br>111489<br>1118584<br>112591<br>113250<br>115639<br>117593<br>118082<br>119665<br>120408<br>122304<br>123304<br>124887<br>123563<br>126085<br>126285  
   | 978<br>978<br>2388<br>621<br>945<br>945<br>441<br>2535<br>441<br>714<br>657<br>2358<br>1914<br>486<br>915<br>642<br>747<br>1896<br>864<br>1656<br>453<br>675<br>231<br>1938  | (c)  | 99.385<br>99.623<br>98.544<br>99.682<br>97.945<br>99.289<br>99.315<br>99.156<br>97.706<br>99.315<br>99.156<br>97.706<br>99.232<br>100<br>99.232<br>100<br>99.819<br>99.842<br>100<br>99.819<br>99.819<br>99.819<br>100  |
| INV hepathibiding under protein (Cop-HSL) IXV hepathibiding under protein (VAAP) IXV hepathibiding under protein (VAAP   | HUL<br>HHL<br>HFR<br>HR<br>DIR<br>DIR<br>DIR<br>DIR<br>DIR<br>DIR<br>DIR<br>DIR<br>DIR<br>DI  | CIXVII2<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI23<br>CIXVI2  | NoF-101         1037-10           NoF-108         103723           NoF-108         103723           NoF-108         103723           NoF-108         103723           NoF-110         107724           NoF-111         107784           NoF-111         10785           NoF-111         10785           NoF-111         10785           NoF-111         10786           NoF-114         11854           NoF-121         11874           NoF-122         11874           NoF-122         11874           NoF-122         12085           NoF-122         120851           NoF-122         120851           NoF-122         120851           NoF-122         12381           NoF-122         12381           NoF-122         12381           NoF-122         12381           NoF-122         12381           No  
   
   
   | 120         570           120         978           100         978           1088         2383           1089         2383           109         945           117         441           11895         2535           224         441           11895         2558           114         656           115         114           114         565           114         566           114         571           118%         667           1164         747           118%         667           771         118%           677         453           464         675           464         675           464         675           463         1935           577         822  
   
   | (c)   | 39.342         99.385           99.385         99.623           99.623         99.682           99.682         99.526           99.526         99.315           99.527         99.154           98.63         99.315           99.315         99.315           99.379         99.368           100         99.194           99.652         99.637           100         100           89.61         99.2617           92.617         92.617   
  | M02-10         (M02, M04, M04, M04, M04, M04, M04, M04, M04  
   
  | $\begin{array}{cccc} 200 & (c) \\ 2078 & (c) \\ 288 & (c) \\ 0.24 & (c) \\ 945 & (c) \\ 945 & (c) \\ 441 & (c) \\ 2355 & (c) \\ 441 & (c) \\ 2358 & (c) \\ 441 & (c) \\ 2358 & (c) \\ 1914 & (c) \\ 1914 & (c) \\ 1914 & (c) \\ 1914 & (c) \\ 486 & (c) \\ 915 & (c) \\ 1914 & (c) \\ 486 & (c) \\ 915 & (c) \\ 1914 & (c) \\ 1915 &$   | 99,65<br>99,66<br>99,74<br>99,74<br>99,74<br>99,74<br>99,74<br>99,57<br>99,57<br>99,57<br>100<br>99,57<br>100<br>99,94<br>99,57<br>100<br>99,94<br>99,95<br>100<br>99,94<br>99,95<br>100<br>99,94<br>99,95<br>100<br>99,45<br>100<br>99,45<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>10  
   | Nath:100           Nath:101           Nath:108           Nath:108           Nath:108           Nath:109           Nath:109           Nath:101           Nath:101           Nath:102           Nath:110           Nath:110           Nath:110           Nath:110           Nath:110           Nath:111           Nath:115           Nath:116           Nath:116           Nath:117           Nath:121  
   
  | <ul> <li>10412</li> <li>10413</li> <li>10413</li> <li>10413</li> <li>10413</li> <li>10413</li> <li>10413</li> <li>10413</li> <li>10413</li> <li>10413</li> <li>10414</li> <li></li></ul>  | \$         978           3         2388           2         625           7         945           5         441           3         2335           2         441           3         2335           2         441           3         2352           441         657           4         657           4         657           9         486           6         915           9         486           6         915           9         486           5         864           1         1656           2         234           1         1655           2         234           1         1935           5         882  | (·)<br>(·)<br>(·)<br>(·)<br>(·)<br>(·)<br>(·)<br>(·)<br>(·)<br>(·)  | 99,692<br>99,748<br>96,135<br>99,482<br>99,482<br>99,485<br>99,485<br>99,156<br>98,599<br>99,156<br>98,599<br>99,179<br>99,570<br>99,570<br>99,570<br>99,572<br>99,572<br>99,542<br>99,542<br>99,542<br>100<br>100<br>100<br>100<br>89,541  | Harrison         Hossen         Hossen         Hossen           Heart         Hossen  
  | (i)           (i)           (i)           (ii)           (iii)           (i)   
   | 100           99.385           99.623           99.623           98.544           99.682           97.945         
 99.289           99.315           99.156           100           99.379           99.385           100           99.597           99.819           99.819           98.5667           100           99.010  
  | Swelf2-107           Swelf2-107           Swelf2-108           Swelf2-109           Swelf2-109           Swelf2-109           Swelf2-110           Swelf2-111           Swelf2-112           Swelf2-113           Swelf2-116           Swelf2-117           Swelf2-117           Swelf2-117           Swelf2-119           Swelf2-120           Swelf2-121           Swelf2-122           Swelf2-122           Swelf2-123           Swelf2-124           Swelf2-125           Swelf2-126           Swelf2-127           Swelf2-127           Swelf2-127           Swelf2-127           Swelf2-127           Swelf2-127           Swelf2-127           Swelf2-127           Swelf2-127           Swelf2-128           Swelf2-127           Swelf2-128           Swelf2-128           Swelf2-128           Swelf2-128           Swelf2-128           Swelf2-128           Swelf2-128           Swelf2-128           Swelf2-128           Sw   | 102147<br>103318<br>104296<br>1064296<br>1064296<br>107490<br>108472<br>108955<br>111448<br>111488<br>111488<br>111488<br>111448<br>111488<br>111448<br>111488<br>111488<br>111448<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111254<br>111608<br>112024<br>122022<br>124911<br>125384<br>126020<br>126020<br>126020<br>126020<br>126020<br>126020<br>126020<br>126020<br>126020<br>126020<br>126000<br>126020<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>126000<br>1260000<br>1260000<br>1260000<br>1260000000000   |
102395<br>104295<br>106683<br>107489<br>108434<br>108912<br>111489<br>113856<br>112594<br>113250<br>115639<br>113595<br>113965<br>12300<br>12300<br>12300<br>12300<br>12300<br>12300<br>125563<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12658<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>12558<br>1255 | 273<br>978<br>2388<br>621<br>945<br>441<br>2535<br>441<br>2535<br>441<br>2535<br>441<br>657<br>2358<br>915<br>642<br>915<br>642<br>915<br>642<br>747<br>747<br>1896<br>864<br>1656<br>643<br>675<br>233<br>1938  |  | 99.385<br>99.623<br>98.544<br>99.682<br>97.945<br>99.882<br>99.882<br>99.315<br>99.156<br>99.236<br>100<br>99.236<br>100<br>99.236<br>100<br>99.597<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842  
   |
| MV Repath billing surface protein (Cop-HSL)     RAP4 (RA) pal assoc pretien (Cop-HSL)     RAP4 (RA) pal assoc protein (Cop-HSL)     DNA toposiemerase type I (Cop-HSR)     (Cop-HSR  | H3L<br>H4L<br>H4R<br>H5R<br>H6R<br>·<br>·<br>H7R<br>D1R<br>D2L<br>D3R<br>D4R<br>D5R<br>D4R<br>D5R<br>D4R<br>D5R<br>D6R<br>D7R<br>D4R<br>D5R<br>D4R<br>D5R<br>D10R<br>D11L<br>D13L<br>A1L<br>A3L<br>A3L<br>A4R   | CPXVII2<br>CPXVII3<br>CPXVII3<br>CPXVII4<br>CPXVII6<br>CPXVII6<br>CPXVII6<br>CPXVI16<br>CPXVI16<br>CPXVI16<br>CPXVI20<br>CPXVI20<br>CPXVI21<br>CPXVI21<br>CPXVI21<br>CPXVI21<br>CPXVI21<br>CPXVI23<br>CPXVI23<br>CPXVI23<br>CPXVI23<br>CPXVI23<br>CPXVI25<br>CPXVI25<br>CPXVI26<br>CPXVI26<br>CPXVI26<br>CPXVI26<br>CPXVI26<br>CPXVI26<br>CPXVI26<br>CPXVI27<br>CPXVI27<br>CPXVI27<br>CPXVI27<br>CPXVI27<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI28<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI38<br>CPXVI3  | NoF-10         NoF-10         NoF-10           NoF-100         NOF-100         NOF-100         NOF-100           NoF-100         NOF-100         NOF-100         NOF-100           NoF-110         NOF-100         NOF-100         NOF-100           NoF-1110         NOF-1110         NOF-1111         NOF-1111           NOF-1111         INSF-1111         INSF-1111         INSF-1111           NOF-1121         INSF-122         INSF-122         INSF-122           NOF-122         INSF-123         INSF-124         INSF-124         INSF-124           NOF-122         INSF-123         INSF-124         INSF-124         INSF-124         INSF-124           NOF-123         INSF-123         INSF-124         INSF-124         INSF-124         INSF-124         INSF-124         INSF-124         INSF-124         INSF-124  
   
   
  | 120         570           120         978           120         978           120         978           120         978           120         979           120         974           120         945           121         441           128         299           121         441           125         294           121         486           120         710           121         486           1238         915           121         486           1238         915           121         486           1238         915           121         486           1238         915           1238         915           124         441           123         1656           123         1656           124         464           1253         777           124         463           1254         1913           1264         1913           127         109           1282         1096  
   
  | (c)   | 38.342           99.385           99.623           99.623           99.623           99.624           99.625           99.625           99.625           99.625           99.625           99.625           99.625           99.625           99.625           99.526           99.526           99.156           90.627           100           99.623           99.194           99.625           99.627           100           100           99.627           100           99.627           99.637           100           100           100           100           100           99.224           92.617           99.39           99.39  
   | Mar 210         (Mod2) (Mod2)           Mar 210         (Mod2) (Mod2)           Mar 210         (Mod2) (Mod2)           Mar 210         (Mod2) (Mod2)           Mar 2110         (Mod2) (Mod2)           Mar 2111         (Mod2) (Mod2)           Mar 2112         (Mod2) (Mod2)           Mar 2111         (Mod2) (Mod2)           Mar 2112         (Mod2) (Mod2)           Mar 2113         (Mod2) (Mod2)           Mar 2115         (Mod2) (Mod2) (Mod2)           Mar 2115         (Mod2) (Mod2) (Mod2) (Mod2)           Mar 2115         (Mod2) (  
   
   | $\begin{array}{cccc} & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & $   |
99.6%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>99.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%<br>90.7%  | Nath:100           Nath:101           Nath:108           Nath:108           Nath:108           Nath:108           Nath:108           Nath:108           Nath:108           Nath:110           Nath:110           Nath:110           Nath:111           Nath:111           Nath:111           Nath:111           Nath:111           Nath:111           Nath:111           Nath:111           Nath:112           Nath:121           Nath:121           Nath:121           Nath:123           Nath:123           Nath:124           Nath:125           Nath:125           Nath:125           Nath:125           Nath:125           Nath:125           Nath:125           Nath:125           Nath:125   
   
   | 100158 [0513]<br>1005126 [07522]<br>1005126 [07522]<br>1005126 [07522]<br>100533 [09775<br>100739 [0833]<br>100739 [0833]<br>100739 [12333]<br>100739 [12333]<br>100739 [12333]<br>11292 [1233]  | \$ 978           \$ 2388           2 624           7 624           \$ 2388           2 624           7 624           \$ 2355           2 441           8 714           4 657           3 2358           7 1914           9 486           6 915           9 486           6 915           9 486           5 864           1 1656           7 453           2 234           1 935           5 882  | ()<br>()<br>()<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  | 99,692<br>99,748<br>96,135<br>99,682<br>97,945<br>99,408<br>99,408<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99  | memory in the set of                
  | (i)           (i)           (i)           (ii)           (iii)   
   
   | 100           99.385         99.623           99.623         99.623           99.682         99.682           99.682         99.682           99.289         99.315           97.706         97.706           100         99.236           100         99.313           100         99.847           99.842         100           99.847         100           99.849         98.8667           100         99.07           93.559         100  
  | Swelf2-107           Swelf2-107           Swelf2-108           Swelf2-109           Swelf2-111           Swelf2-112           Swelf2-117           Swelf2-117           Swelf2-120           Swelf2-120           Swelf2-121           Swelf2-121           Swelf2-122           Swelf2-122           Swelf2-125           Swelf2-125           Swelf2-126           Swelf2-129           Swelf2-129  | 102147<br>103318<br>104296<br>1064296<br>1064296<br>107490<br>108955<br>111448<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288<br>11288   |
10330<br>104295<br>106683<br>107389<br>108434<br>108912<br>111489<br>111882<br>111689<br>112594<br>113250<br>115639<br>112594<br>113250<br>115639<br>112594<br>113892<br>119655<br>120408<br>122304<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>120   | 278<br>2788<br>2388<br>621<br>945<br>945<br>945<br>945<br>945<br>945<br>945<br>945   |  | 99.385<br>99.623<br>98.544<br>99.682<br>97.945<br>99.289<br>99.315<br>99.156<br>97.706<br>99.293<br>100<br>99.217<br>99.013<br>100<br>99.842<br>100<br>99.842<br>100<br>99.849<br>100   
   |
| INV hepathibiding unface protein (Cop-HSL) EAPP4 (RX) pad assoc protein (Cop-HSL) EAPP4 (RX) pad assoc protein (Cop-HSL) UTF4 (last transcription flact-47 (Cop-HSR) (Cry-8-116 Viral networks (Pad-FR) (Cry-8-116 Viral networks (Pad-FR) (Cry-8-116 Viral networks (Pad-FR) (Cop-HSR) Viral network (Cop-HSR) Viral network (Cop-HSR) Viral network (Cop-HSR) Viral networks (Cop   | HUL<br>HHL<br>HHR<br>HRR<br>DIR<br>DIR<br>DIR<br>DIR<br>DIR<br>DIR<br>DIR<br>DIR<br>DIR<br>D  | CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL3<br>CPAVIL  | NoF-10         1037-10           NoF-100         1037-21           NoF-100         10372-10           NoF-110         10372-10           NoF-111         1072-41           NoF-1111         10785-10           NoF-1111         10785-10           NoF-1111         10785-10           NoF-1111         10785-10           NoF-1111         10785-11           NoF-1111         10785-11           NoF-1111         10785-11           NoF-1111         10785-11           NoF-1111         10785-11           NoF-1111         10880-11           NoF-1111         10880-11           NoF-111         10880-11           NoF-111         10880-11           NoF-121         10880-11           NoF-122         10881-11           NoF-122         10881-12           NoF-123         12884-12           NoF-124         12744-12           NoF-125         12888-12           NoF-125         12881-12           NoF-125         12881-12           NoF-125         12881-12           NoF-125         12881-12           NoF-125         12881-12 <tr< th=""><th>120         570           120         978           120         978           120         978           128         984           121         945           127         441           129         945           1217         441           1285         2235           1294         441           120         714           656         657           645         2358           11         486           656         667           11         886           999         1914           511         486           677         842           1231         1666           7231         1666           723         1664           723         1675           644         1935           577         882           109         495           724         110</th><th>(c)           (c)           (c)</th><th>39.342           99.385           99.385           99.385           99.382           99.682           99.682           99.682           99.156           99.155           98.165           98.165           98.165           98.165           98.165           99.379           97.368           100           99.442           99.652           99.652           99.651           99.264           99.652           99.651           99.261           99.224           99.621           99.637           100           89.61           99.224           99.224           99.224           99.224           99.224           99.224           99.224           99.224           99.224           99.224           99.235</th><th>M02-10         (M02, 014)           M02-10         (M02, 014)           M02-10         (M17)           M02-11         (M03)           M02-11         (M03)           M02-11         (M03)           M02-11         (M03)           M02-11         (M03)           M02-11         (M04)           M02-12         (M04)<th><math display="block">\begin{array}{cccc} 200 &amp; (c) \\ 2088 &amp; (c) \\ 2888 &amp; (c) \\ 0624 &amp; (c) \\ 945 &amp; (c) \\ 945 &amp; (c) \\ 441 &amp; (c) \\ 2355 &amp; (c) \\ 441 &amp; (c) \\ 2358 &amp; (c) \\ 441 &amp; (c) \\ 2358 &amp; (c) \\ 1914 &amp; (c) \\ 2358 &amp; (c) \\ 1914 &amp; (c) \\ 486 &amp; (c) \\ 1914 &amp; (c) \\ 486 &amp; (c) \\ 1914 &amp; (c) \\ 486 &amp; (c) \\ 1914 &amp; (c) \\ 1915 &amp; (c) \\ 1915</math></th><th>99.69<br/>99.74<br/>99.74<br/>99.74<br/>99.74<br/>99.75<br/>99.75<br/>99.75<br/>99.75<br/>99.75<br/>100<br/>99.75<br/>100<br/>99.84<br/>99.85<br/>100<br/>99.95<br/>100<br/>99.94<br/>57<br/>100<br/>99.84<br/>99.85<br/>100<br/>99.84<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.95<br/>100<br/>99.85<br/>100<br/>99.95<br/>100<br/>99.95<br/>100<br/>99.95<br/>100<br/>99.95<br/>100<br/>99.95<br/>100<br/>99.95<br/>100<br/>99.95<br/>100<br/>99.95<br/>100<br/>99.95<br/>100<br/>99.95<br/>100<br/>99.95<br/>100<br/>99.95<br/>100<br/>99.95<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>10</th><th>North-100           North-108           North-108           North-108           North-108           North-108           North-111           North-112           North-121           North-122           North-123           North-124           North-124           North-124           North-124           North-124           North-124           North-124           North-124           North-124           North-128           <td< th=""><th>000000         10012           0000000         100126           010126         10732           010126         10732           010709         10833           000331         109775           000331         109775           000331         109775           11225  
      11343           114126         114848           11425         114848           11425         114848           11425         114843           11425         114843           11425         114844           118446         118942           118454         1149988           119852         123182           124046         1225755           122051         122318           124051         122675           122051         122631           124051         122631           124267         122631           1242751         122031           122689         127331           124051         126901           124274         129081           130041         310641</th><th>\$         978           \$         978           \$         2388           \$         2624           7         945           \$         441           \$         2535           \$         441           \$         2535           \$         441           \$         70           \$         714           \$         7194           \$         9642           \$         9642           \$         864           \$         864           \$         864           \$         1655           \$         862           \$         675           \$         234           \$         1935           \$         882           \$         9495</th><th>(c)<br/>(c)<br/>(c)<br/>(c)<br/>(c)<br/>(c)<br/>(c)<br/>(c)<br/>(c)<br/>(c)</th><th>99,692<br/>99,748<br/>96,133<br/>99,682<br/>97,945<br/>99,408<br/>99,315<br/>99,315<br/>99,315<br/>99,315<br/>99,315<br/>99,315<br/>99,315<br/>99,315<br/>99,315<br/>99,315<br/>99,315<br/>100<br/>99,319<br/>99,512<br/>99,512<br/>100<br/>100<br/>100<br/>100<br/>99,514<br/>99,552<br/>99,552</th><th>weilt-100         105:00         105:00         105:00           weilt-100         105:00         106:00         106:00           weilt-100         105:00         106:00         106:00           weilt-100         106:00         106:00         106:00           weilt-110         107:02         107:02         107:02           weilt-110         107:02         107:02         107:02           weilt-110         107:02         107:02         107:02           weilt-110         107:02         107:02         107:02           weilt-111&lt;1108:111:02         24:11         107:22         117:02           weilt-111&lt;1108:11:12         117:22         117:02         44           weilt-111&lt;1108:11:12         117:21         117:02         44           weilt-111&lt;1108:11:172         118:01         117:72         108:00           weilt-111:1114:11:117:11:18:11:12         117:11:14:11:12         117:14:11:12         118:00           weilt-121:1119:01         119:09         4:17:11:19:11:10:19:09         4:17:11:19:11:10:19:09         4:17:11:19:11:10:19:09         4:17:11:19:11:11:10:11:11:11:11:11:11:11:11:11:11:</th><th>(i)           (i)           (i)           (ii)           (iii)           (i)           (i)</th><th>100           99.385           99.623           98.544           99.682           99.355           99.315           99.315           99.331           99.331           99.331           99.331           99.331           99.331           99.331           99.333           99.333           99.334           99.335           99.342           99.842           99.842           99.842           99.843           100           99.845           100           99.845           100           99.567           90.559           100           99.551           100           90.555          
100</th><th>Swelf2-107<br/>Swelf2-107<br/>Swelf2-108<br/>Swelf2-108<br/>Swelf2-108<br/>Swelf2-110<br/>Swelf2-110<br/>Swelf2-112<br/>Swelf2-112<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-116<br/>Swelf2-116<br/>Swelf2-116<br/>Swelf2-117<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125</th><th>102147<br/>103318<br/>104296<br/>1064296<br/>1064296<br/>1064296<br/>1064296<br/>1064296<br/>107490<br/>108955<br/>111448<br/>111881<br/>112594<br/>119625<br/>1116580<br/>117620<br/>118068<br/>119024<br/>119628<br/>119024<br/>119667<br/>129176<br/>126300<br/>129176</th><th>10330<br/>104295<br/>106683<br/>107489<br/>108434<br/>108912<br/>111489<br/>112894<br/>113250<br/>11805<br/>118982<br/>11805<br/>118982<br/>11805<br/>118982<br/>11805<br/>118982<br/>12304<br/>12304<br/>12304<br/>12304<br/>12304<br/>12304<br/>12304<br/>12304<br/>12304<br/>12305<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>129078<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>120</th><th>278<br/>278<br/>2388<br/>621<br/>441<br/>2533<br/>441<br/>714<br/>441<br/>714<br/>457<br/>2358<br/>1914<br/>486<br/>477<br/>747<br/>747<br/>642<br/>747<br/>749<br/>642<br/>643<br/>665<br/>643<br/>665<br/>643<br/>864<br/>864<br/>864<br/>864<br/>864<br/>864<br/>864<br/>864</th><th></th><th>99.385<br/>99.623<br/>98.544<br/>99.682<br/>99.682<br/>99.682<br/>99.289<br/>99.315<br/>99.156<br/>99.236<br/>100<br/>99.236<br/>100<br/>99.236<br/>100<br/>99.597<br/>100<br/>99.597<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>99.679<br/>100<br/>99.429</th></td<></th></th></tr<>   
   | 120         570           120         978           120         978           120         978           128         984           121         945           127         441           129         945           1217         441           1285         2235           1294         441           120         714           656         657           645         2358           11         486           656         667           11         886           999         1914           511         486           677         842           1231         1666           7231         1666           723         1664           723         1675           644         1935           577         882           109         495           724         110  
   
   
   | (c)   | 39.342           99.385           99.385           99.385           99.382           99.682           99.682           99.682           99.156           99.155           98.165           98.165           98.165           98.165           98.165           99.379           97.368           100           99.442           99.652           99.652           99.651           99.264           99.652           99.651           99.261           99.224           99.621           99.637           100           89.61           99.224           99.224           99.224           99.224           99.224           99.224           99.224           99.224           99.224           99.224           99.235   | M02-10         (M02, 014)           M02-10         (M02, 014)           M02-10         (M17)           M02-11         (M03)           M02-11         (M03)           M02-11         (M03)           M02-11         (M03)           M02-11         (M03)           M02-11         (M04)           M02-12         (M04) <th><math display="block">\begin{array}{cccc} 200 &amp; (c) \\ 2088 &amp; (c) \\ 2888 &amp; (c) \\ 0624 &amp; (c) \\ 945 &amp; (c) \\ 945 &amp; (c) \\ 441 &amp; (c) \\ 2355 &amp; (c) \\ 441 &amp; (c) \\ 2358 &amp; (c) \\ 441 &amp; (c) \\ 2358 &amp; (c) \\ 1914 &amp; (c) \\ 2358 &amp; (c) \\ 1914 &amp; (c) \\ 486 &amp; (c) \\ 1914 &amp; (c) \\ 486 &amp; (c) \\ 1914 &amp; (c) \\ 486 &amp; (c) \\ 1914 &amp; (c) \\ 1915 &amp; (c) \\ 1915</math></th> <th>99.69<br/>99.74<br/>99.74<br/>99.74<br/>99.74<br/>99.75<br/>99.75<br/>99.75<br/>99.75<br/>99.75<br/>100<br/>99.75<br/>100<br/>99.84<br/>99.85<br/>100<br/>99.95<br/>100<br/>99.94<br/>57<br/>100<br/>99.84<br/>99.85<br/>100<br/>99.84<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.95<br/>100<br/>99.85<br/>100<br/>99.95<br/>100<br/>99.95<br/>100<br/>99.95<br/>100<br/>99.95<br/>100<br/>99.95<br/>100<br/>99.95<br/>100<br/>99.95<br/>100<br/>99.95<br/>100<br/>99.95<br/>100<br/>99.95<br/>100<br/>99.95<br/>100<br/>99.95<br/>100<br/>99.95<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>10</th> <th>North-100           North-108           North-108           North-108           North-108           North-108           North-111           North-112           North-121           North-122           North-123           North-124           North-124           North-124           North-124           North-124           North-124           North-124           North-124           North-124           North-128           <td< th=""><th>000000         10012           0000000         100126           010126         10732           010126         10732           010709         10833           000331         109775           000331         109775           000331         109775           11225         11343           114126         114848           11425         114848           11425         114848           11425         114843           11425         114843           11425         114844           118446         118942           118454         1149988           119852         123182           124046         1225755           122051         122318           124051         122675           122051         122631           124051         122631           124267         122631           1242751         122031           122689         127331           124051         126901           124274         129081           130041         310641</th><th>\$         978           \$         978           \$         2388           \$         2624           7         945           \$         441           \$         2535           \$         441           \$         2535           \$         441           \$         70           \$         714           \$         7194           \$         9642           \$         9642           \$         864           \$         864           \$         864           \$         1655           \$         862           \$         675           \$         234           \$         1935           \$         882           \$         9495</th><th>(c)<br/>(c)<br/>(c)<br/>(c)<br/>(c)<br/>(c)<br/>(c)<br/>(c)<br/>(c)<br/>(c)</th><th>99,692<br/>99,748<br/>96,133<br/>99,682<br/>97,945<br/>99,408<br/>99,315<br/>99,315<br/>99,315<br/>99,315<br/>99,315<br/>99,315<br/>99,315<br/>99,315<br/>99,315<br/>99,315<br/>99,315<br/>100<br/>99,319<br/>99,512<br/>99,512<br/>100<br/>100<br/>100<br/>100<br/>99,514<br/>99,552<br/>99,552</th><th>weilt-100         105:00         105:00         105:00           weilt-100         105:00         106:00         106:00           weilt-100         105:00         106:00         106:00           weilt-100         106:00         106:00         106:00           weilt-110         107:02         107:02         107:02           weilt-110         107:02         107:02         107:02           weilt-110         107:02         107:02         107:02           weilt-110         107:02         107:02         107:02           weilt-111&lt;1108:111:02         24:11         107:22         117:02           weilt-111&lt;1108:11:12         117:22         117:02         44           weilt-111&lt;1108:11:12         117:21         117:02         44           weilt-111&lt;1108:11:172         118:01         117:72         108:00           weilt-111:1114:11:117:11:18:11:12         117:11:14:11:12         117:14:11:12         118:00           weilt-121:1119:01         119:09         4:17:11:19:11:10:19:09         4:17:11:19:11:10:19:09        
4:17:11:19:11:10:19:09         4:17:11:19:11:11:10:11:11:11:11:11:11:11:11:11:11:</th><th>(i)           (i)           (i)           (ii)           (iii)           (i)           (i)</th><th>100           99.385           99.623           98.544           99.682           99.355           99.315           99.315           99.331           99.331           99.331           99.331           99.331           99.331           99.331           99.333           99.333           99.334           99.335           99.342           99.842           99.842           99.842           99.843           100           99.845           100           99.845           100           99.567           90.559           100           99.551           100           90.555           100</th><th>Swelf2-107<br/>Swelf2-107<br/>Swelf2-108<br/>Swelf2-108<br/>Swelf2-108<br/>Swelf2-110<br/>Swelf2-110<br/>Swelf2-112<br/>Swelf2-112<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-116<br/>Swelf2-116<br/>Swelf2-116<br/>Swelf2-117<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125</th><th>102147<br/>103318<br/>104296<br/>1064296<br/>1064296<br/>1064296<br/>1064296<br/>1064296<br/>107490<br/>108955<br/>111448<br/>111881<br/>112594<br/>119625<br/>1116580<br/>117620<br/>118068<br/>119024<br/>119628<br/>119024<br/>119667<br/>129176<br/>126300<br/>129176</th><th>10330<br/>104295<br/>106683<br/>107489<br/>108434<br/>108912<br/>111489<br/>112894<br/>113250<br/>11805<br/>118982<br/>11805<br/>118982<br/>11805<br/>118982<br/>11805<br/>118982<br/>12304<br/>12304<br/>12304<br/>12304<br/>12304<br/>12304<br/>12304<br/>12304<br/>12304<br/>12305<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>129078<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>120</th><th>278<br/>278<br/>2388<br/>621<br/>441<br/>2533<br/>441<br/>714<br/>441<br/>714<br/>457<br/>2358<br/>1914<br/>486<br/>477<br/>747<br/>747<br/>642<br/>747<br/>749<br/>642<br/>643<br/>665<br/>643<br/>665<br/>643<br/>864<br/>864<br/>864<br/>864<br/>864<br/>864<br/>864<br/>864</th><th></th><th>99.385<br/>99.623<br/>98.544<br/>99.682<br/>99.682<br/>99.682<br/>99.289<br/>99.315<br/>99.156<br/>99.236<br/>100<br/>99.236<br/>100<br/>99.236<br/>100<br/>99.597<br/>100<br/>99.597<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>99.679<br/>100<br/>99.429</th></td<></th>  
  | $\begin{array}{cccc} 200 & (c) \\ 2088 & (c) \\ 2888 & (c) \\ 0624 & (c) \\ 945 & (c) \\ 945 & (c) \\ 441 & (c) \\ 2355 & (c) \\ 441 & (c) \\ 2358 & (c) \\ 441 & (c) \\ 2358 & (c) \\ 1914 & (c) \\ 2358 & (c) \\ 1914 & (c) \\ 486 & (c) \\ 1914 & (c) \\ 486 & (c) \\ 1914 & (c) \\ 486 & (c) \\ 1914 & (c) \\ 1915 & (c) \\ 1915$   | 99.69<br>99.74<br>99.74<br>99.74<br>99.74<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>100<br>99.75<br>100<br>99.84<br>99.85<br>100<br>99.95<br>100<br>99.94<br>57<br>100<br>99.84<br>99.85<br>100<br>99.84<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>99.95<br>100<br>99.85<br>100<br>99.95<br>100<br>99.95<br>100<br>99.95<br>100<br>99.95<br>100<br>99.95<br>100<br>99.95<br>100<br>99.95<br>100<br>99.95<br>100<br>99.95<br>100<br>99.95<br>100<br>99.95<br>100<br>99.95<br>100<br>99.95<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>10   | North-100           North-108           North-108           North-108           North-108           North-108           North-111           North-112           North-121           North-122           North-123           North-124           North-124           North-124           North-124           North-124           North-124           North-124           North-124           North-124           North-128           North-128 <td< th=""><th>000000         10012           0000000         100126           010126         10732           010126         10732           010709         10833           000331         109775           000331      
  109775           000331         109775           11225         11343           114126         114848           11425         114848           11425         114848           11425         114843           11425         114843           11425         114844           118446         118942           118454         1149988           119852         123182           124046         1225755           122051         122318           124051         122675           122051         122631           124051         122631           124267         122631           1242751         122031           122689         127331           124051         126901           124274         129081           130041         310641</th><th>\$         978           \$         978           \$         2388           \$         2624           7         945           \$         441           \$         2535           \$         441           \$         2535           \$         441           \$         70           \$         714           \$         7194           \$         9642           \$         9642           \$         864           \$         864           \$         864           \$         1655           \$         862           \$         675           \$         234           \$         1935           \$         882           \$         9495</th><th>(c)<br/>(c)<br/>(c)<br/>(c)<br/>(c)<br/>(c)<br/>(c)<br/>(c)<br/>(c)<br/>(c)</th><th>99,692<br/>99,748<br/>96,133<br/>99,682<br/>97,945<br/>99,408<br/>99,315<br/>99,315<br/>99,315<br/>99,315<br/>99,315<br/>99,315<br/>99,315<br/>99,315<br/>99,315<br/>99,315<br/>99,315<br/>100<br/>99,319<br/>99,512<br/>99,512<br/>100<br/>100<br/>100<br/>100<br/>99,514<br/>99,552<br/>99,552</th><th>weilt-100         105:00         105:00         105:00           weilt-100         105:00         106:00         106:00           weilt-100         105:00         106:00         106:00           weilt-100         106:00         106:00         106:00           weilt-110         107:02         107:02         107:02           weilt-110         107:02         107:02         107:02           weilt-110         107:02         107:02         107:02           weilt-110         107:02         107:02         107:02           weilt-111&lt;1108:111:02         24:11         107:22         117:02           weilt-111&lt;1108:11:12         117:22         117:02         44           weilt-111&lt;1108:11:12         117:21         117:02         44           weilt-111&lt;1108:11:172         118:01         117:72         108:00           weilt-111:1114:11:117:11:18:11:12         117:11:14:11:12         117:14:11:12         118:00           weilt-121:1119:01         119:09         4:17:11:19:11:10:19:09         4:17:11:19:11:10:19:09         4:17:11:19:11:10:19:09         4:17:11:19:11:11:10:11:11:11:11:11:11:11:11:11:11:</th><th>(i)           (i)           (i)           (ii)           (iii)           (i)           (i)</th><th>100           99.385           99.623           98.544           99.682           99.355           99.315           99.315           99.331           99.331           99.331           99.331           99.331           99.331           99.331           99.333           99.333           99.334           99.335           99.342           99.842           99.842           99.842           99.843           100           99.845           100           99.845           100           99.567           90.559           100           99.551           100           90.555          
100</th><th>Swelf2-107<br/>Swelf2-107<br/>Swelf2-108<br/>Swelf2-108<br/>Swelf2-108<br/>Swelf2-110<br/>Swelf2-110<br/>Swelf2-112<br/>Swelf2-112<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-116<br/>Swelf2-116<br/>Swelf2-116<br/>Swelf2-117<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-115<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125<br/>Swelf2-125</th><th>102147<br/>103318<br/>104296<br/>1064296<br/>1064296<br/>1064296<br/>1064296<br/>1064296<br/>107490<br/>108955<br/>111448<br/>111881<br/>112594<br/>119625<br/>1116580<br/>117620<br/>118068<br/>119024<br/>119628<br/>119024<br/>119667<br/>129176<br/>126300<br/>129176</th><th>10330<br/>104295<br/>106683<br/>107489<br/>108434<br/>108912<br/>111489<br/>112894<br/>113250<br/>11805<br/>118982<br/>11805<br/>118982<br/>11805<br/>118982<br/>11805<br/>118982<br/>12304<br/>12304<br/>12304<br/>12304<br/>12304<br/>12304<br/>12304<br/>12304<br/>12304<br/>12305<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>126058<br/>129078<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>129058<br/>120</th><th>278<br/>278<br/>2388<br/>621<br/>441<br/>2533<br/>441<br/>714<br/>441<br/>714<br/>457<br/>2358<br/>1914<br/>486<br/>477<br/>747<br/>747<br/>642<br/>747<br/>749<br/>642<br/>643<br/>665<br/>643<br/>665<br/>643<br/>864<br/>864<br/>864<br/>864<br/>864<br/>864<br/>864<br/>864</th><th></th><th>99.385<br/>99.623<br/>98.544<br/>99.682<br/>99.682<br/>99.682<br/>99.289<br/>99.315<br/>99.156<br/>99.236<br/>100<br/>99.236<br/>100<br/>99.236<br/>100<br/>99.597<br/>100<br/>99.597<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>99.679<br/>100<br/>99.429</th></td<>   
  | 000000         10012           0000000         100126           010126         10732           010126         10732           010709         10833           000331         109775           000331         109775           000331         109775           11225         11343           114126         114848           11425         114848           11425         114848           11425         114843           11425         114843           11425         114844           118446         118942           118454         1149988           119852         123182           124046         1225755           122051         122318           124051         122675           122051         122631           124051         122631           124267         122631           1242751         122031           122689         127331           124051         126901           124274         129081           130041         310641  | \$         978           \$         978           \$         2388           \$         2624           7         945           \$         441           \$         2535           \$         441           \$         2535           \$         441           \$         70           \$         714           \$         7194           \$         9642           \$         9642           \$         864           \$         864           \$         864           \$         1655           \$         862           \$         675           \$         234           \$         1935           \$         882           \$         9495   | (c)<br>(c)<br>(c)<br>(c)<br>(c)<br>(c)<br>(c)<br>(c)<br>(c)<br>(c)  
   | 99,692<br>99,748<br>96,133<br>99,682<br>97,945<br>99,408<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>100<br>99,319<br>99,512<br>99,512<br>100<br>100<br>100<br>100<br>99,514<br>99,552<br>99,552   | weilt-100         105:00         105:00         105:00           weilt-100         105:00         106:00         106:00           weilt-100         105:00         106:00         106:00           weilt-100         106:00         106:00         106:00           weilt-110         107:02         107:02         107:02           weilt-110         107:02         107:02         107:02           weilt-110         107:02         107:02         107:02           weilt-110         107:02         107:02         107:02           weilt-111<1108:111:02         24:11         107:22         117:02           weilt-111<1108:11:12         117:22         117:02         44           weilt-111<1108:11:12         117:21         117:02         44           weilt-111<1108:11:172         118:01         117:72         108:00           weilt-111:1114:11:117:11:18:11:12         117:11:14:11:12         117:14:11:12         118:00           weilt-121:1119:01         119:09         4:17:11:19:11:10:19:09         4:17:11:19:11:10:19:09         4:17:11:19:11:10:19:09         4:17:11:19:11:11:10:11:11:11:11:11:11:11:11:11:11:   
  | (i)           (i)           (i)           (ii)           (iii)           (i)   
   | 100           99.385           99.623           98.544           99.682           99.355           99.315           99.315           99.331           99.331           99.331           99.331           99.331           99.331           99.331           99.333           99.333           99.334           99.335           99.342           99.842           99.842           99.842           99.843           100           99.845           100           99.845           100           99.567           90.559           100           99.551           100           90.555           100  
  |
Swelf2-107<br>Swelf2-107<br>Swelf2-108<br>Swelf2-108<br>Swelf2-108<br>Swelf2-110<br>Swelf2-110<br>Swelf2-112<br>Swelf2-112<br>Swelf2-115<br>Swelf2-115<br>Swelf2-116<br>Swelf2-116<br>Swelf2-116<br>Swelf2-117<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-115<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125<br>Swelf2-125  | 102147<br>103318<br>104296<br>1064296<br>1064296<br>1064296<br>1064296<br>1064296<br>107490<br>108955<br>111448<br>111881<br>112594<br>119625<br>1116580<br>117620<br>118068<br>119024<br>119628<br>119024<br>119667<br>129176<br>126300<br>129176   | 10330<br>104295<br>106683<br>107489<br>108434<br>108912<br>111489<br>112894<br>113250<br>11805<br>118982<br>11805<br>118982<br>11805<br>118982<br>11805<br>118982<br>12304<br>12304<br>12304<br>12304<br>12304<br>12304<br>12304<br>12304<br>12304<br>12305<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>126058<br>129078<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>129058<br>120   | 278<br>278<br>2388<br>621<br>441<br>2533<br>441<br>714<br>441<br>714<br>457<br>2358<br>1914<br>486<br>477<br>747<br>747<br>642<br>747<br>749<br>642<br>643<br>665<br>643<br>665<br>643<br>864<br>864<br>864<br>864<br>864<br>864<br>864<br>864   
   |  | 99.385<br>99.623<br>98.544<br>99.682<br>99.682<br>99.682<br>99.289<br>99.315<br>99.156<br>99.236<br>100<br>99.236<br>100<br>99.236<br>100<br>99.597<br>100<br>99.597<br>100<br>100<br>100<br>100<br>100<br>100<br>99.679<br>100<br>99.429   |
| INV is parth billing surface protein (Cop-HSL)<br>RAP4 (RN) pal assoc protein (Cop-HSL)<br>RAP4 (RN) pal assoc protein (Cop-HSL)<br>DNA toposisemerase type I (Cop-HSR)<br>(CYP-8-116<br>Viral membrane assembly proteins (VMAP)(Cop-HSR)<br>Mina core (Cop-D3R)<br>Viral core (Cop-D3R)<br>Correlation (Cop-D3R)<br>Correlation (Cop-D3R)<br>Correlation (Cop-D3R)<br>Managements (Cop-D5R)<br>Mapphagenesis, Viral (correlation (Cop-D6R))<br>RNA adjourgenesis, Give-Binding IV membrane protein (Cop-D6R)<br>anRNA decapping cargine (Cop-D1R)<br>MRNA decapping cargine (Cop-D1R)<br>M  | H3L           H4L           H4R           H5R           H6R           D1R           D2L           D3R           D4R           D5R           D6R           D7R           D9R           D10R           D1L           D1L           D1L           D1L           A1L           A25L           A3L           A4L           A5R           A6L   | CPAVII2<br>CPAVII2<br>CPAVII3<br>CPAVII4<br>CPAVII6<br>CPAVII6<br>CPAVI16<br>CPAVI16<br>CPAVI16<br>CPAVI16<br>CPAVI17<br>CPAVI20<br>CPAVI21<br>CPAVI21<br>CPAVI21<br>CPAVI22<br>CPAVI23<br>CPAVI23<br>CPAVI23<br>CPAVI23<br>CPAVI23<br>CPAVI23<br>CPAVI23<br>CPAVI23<br>CPAVI23<br>CPAVI23<br>CPAVI25<br>CPAVI26<br>CPAVI26<br>CPAVI27<br>CPAVI27<br>CPAVI27<br>CPAVI28<br>CPAVI27<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI28<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI38<br>CPAVI3  | NoF-10         1037-10           NoF-100         103723           NoF-100         103723           NoF-110         103723           NoF-1110         107274           NoF-1111         107274           NoF-1111         107374           NoF-1111         107374           NoF-1111         107387           NoF-1111         107387           NoF-1111         107387           NoF-1111         107387           NoF-1111         103861           NoF-1111         118541           NoF-1111         118361           NoF-1111         118361           NoF-1111         118361           NoF-1111         118361           NoF-121         119430           NoF-121         119430           NoF-122         120861           NoF-122         120815           NoF-122         120815           NoF-122         120815           NoF-122         120815           NoF-122         120815           NoF-123         120815           NoF-124         12744           NoF-125         126709           NoF-130         126905   
   
   
   | 120         570           120         978           00         978           0088         2288           0884         621           0885         2535           294         441           805         2535           294         441           000         714           656         657           808         915           2317         486           308         915           308         915           308         915           410         1066           607         864           273         1656           709         453           2464         675           6644         234           6643         193           982         224           1109         495   
   
   | (c)   | 78.342           99.385           99.623           99.623           99.623           99.684           99.685           99.685           99.686           99.526           99.315           99.156           98.165           98.165           98.101           100           99.379           97.368           99.652           99.652           99.652           99.651           99.652           99.651    
      99.652           99.652           99.651           99.652           99.651           99.371           100           100           99.652           99.652           99.652           99.652           99.652           99.652           99.39           99.254           99.39           99.39           99.718   | M02210         (M023)         (M023)           M02210         (M023)         (M073)           M02210         (M073)         (M074)           M02211         (M074)         (M074)           M02212         (M074)         (M074)           M02213         (M074)         (M074)           M02214         (M074)         (M074)           M02215         (M074)         (M074)           M02212         (M074)         (M0772)           M02212   
   
  | $\begin{array}{cccc} & & & & \\ & & & & \\ & & & & \\ & & & & $   | 99.6%<br>99.6%<br>99.74<br>99.74<br>99.74<br>99.74<br>99.74<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>10  
   | Nath:107           Nath:108           Nath:108           Nath:108           Nath:108           Nath:108           Nath:108           Nath:108           Nath:108           Nath:108           Nath:110           Nath:1112           Nath:1112           Nath:1112           Nath:115           Nath:116           Nath:117           Nath:117           Nath:117           Nath:121           Nath:121           Nath:121           Nath:121           Nath:121           Nath:121           Nath:121           Nath:121           Nath:123           Nath:123           Nath:124           Nath:125           Nath:126           Nath:127           Nath:128  
   
  | 004158 10513100126<br>1075220079 107532<br>1005136 107522<br>100719 108333<br>100533 10927<br>1009315 109755<br>109799 11233<br>11292 11233<br>11292 11233<br>11292 11233<br>11292 11233<br>11292 11235<br>112444<br>114125 11648<br>11492 11952<br>11592 11592<br>11592 11592<br>11592<br>11592<br>11592 11592<br>11592 11592 | 978           978           2388           2 624           7 945           5 441           3 2358           2 441           3 2352           2 441           3 2353           2 441           4 657           3 2358           9 486           6 915           9 642           2 747           8 1896           5 8864           1 1656           7 453           2 674           1 1935           5 882           7 495           2 1119  | (c)<br>(c)<br>(c)<br>(c)<br>(c)<br>(c)<br>(c)<br>(c)<br>(c)<br>(c)  | 99,692<br>99,748<br>96,135<br>99,682<br>99,882<br>99,408<br>99,408<br>99,408<br>99,408<br>99,408<br>99,408<br>99,408<br>99,408<br>99,408<br>99,408<br>99,408<br>99,408<br>99,408<br>99,408<br>99,408<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>99,409<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>99,509<br>100<br>100<br>100<br>100<br>99,509<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>99,909<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100  | Beam-Bornellow         Boson         Space           Beam-Bornellow         Space         Space           Beam-Bornellow         Boson         Boson           Beam-Boson         Boson         Boson           Beam-Boson         Boson         Boson           Beam-Boson         Boson         Boson           Beam-Boson         Boson         Boson           Be  
   | (i)           (i)           (i)           (ii)           (iii)  
   
  | 100         99.385         99.385           99.623         39.8544         99.623           99.624         99.629         99.859           97.945         99.289         99.315           99.939         99.319         99.315         99.296           99.379         99.319         99.379         99.379           99.939         99.379         99.379         99.379           99.937         99.9379         99.937         99.937           99.939         99.937         99.937         99.937           99.9597         77.066         667         100           99.819         99.575         99.557         93.559           91.00         100         99.375         93.559           91.01         100         99.375         99.759           99.942         100         100         99.759           99.579         91.59         91.59         100           99.42         99.759         91.59         91.59  
   | Swelt2-107<br>Swelt2-107<br>Swelt2-108<br>Swelt2-108<br>Swelt2-108<br>Swelt2-110<br>Swelt2-110<br>Swelt2-110<br>Swelt2-110<br>Swelt2-115<br>Swelt2-115<br>Swelt2-115<br>Swelt2-115<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120<br>Swelt2-120  | 102147<br>103318<br>104296<br>106869<br>107490<br>108472<br>108955<br>111448<br>11382<br>115680<br>117620<br>118068<br>117620<br>118068<br>119024<br>119024<br>119024<br>119024<br>119024<br>119024<br>119024<br>119024<br>122388<br>123232<br>124911<br>125580<br>128290<br>128290<br>128290<br>129176<br>129605  |
102301<br>104295<br>106832<br>107483<br>108434<br>108912<br>11489<br>112594<br>113201<br>11489<br>115539<br>115539<br>115539<br>115539<br>115539<br>115539<br>115539<br>12008<br>122301<br>124887<br>123201<br>124887<br>125363<br>12658<br>126285<br>126285<br>126285<br>126285<br>126285<br>126285<br>126285<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385<br>126385   | 278<br>2788<br>621<br>945<br>945<br>945<br>945<br>945<br>1914<br>441<br>714<br>657<br>2358<br>1914<br>456<br>642<br>747<br>1896<br>642<br>747<br>1896<br>642<br>747<br>1896<br>642<br>747<br>1896<br>642<br>747<br>1896<br>642<br>747<br>1915<br>854<br>854<br>854<br>1915<br>1655<br>1915<br>1655<br>1915<br>1915<br>1915<br>1915<br>1915<br>1915<br>1915<br>1915<br>1915<br>1915<br>1915<br>1915<br>1915<br>1915<br>1915<br>1915<br>1915<br>1915<br>1915<br>1915<br>1915<br>1915<br>1915<br>1915<br>1915<br>1915<br>1915<br>1915<br>1915<br>1915<br>1915<br>1915<br>1915<br>1915<br>1915<br>1915<br>1915<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1918<br>1917<br>1918<br>1918<br>1917<br>1917<br>1918<br>1918<br>1917<br>1917<br>1918<br>1917<br>1918<br>1918<br>1918<br>1918<br>1917<br>1918<br>1917<br>1918<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1918<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1918<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>1917<br>19   |  | 99.385<br>99.623<br>98.544<br>99.623<br>99.289<br>99.289<br>99.289<br>99.315<br>99.135<br>99.135<br>99.135<br>99.315<br>99.236<br>100<br>99.013<br>100<br>99.013<br>100<br>99.947<br>100<br>100<br>99.819<br>99.842<br>100  
   |
| IMV legath bilding under protein (Cop-H3L) IAVP legath bilding under protein (Cop-H3L) IAVP (RX) pal assoc protein (Cop-H3L) IAVP (LAV) pal assoc protein (Cop-H3R) IAVP (C   | IEIL           IHL           IHR           IFR           IBR           DIR           AIL    | CTXV112<br>CTXV113<br>CTXV113<br>CTXV114<br>CTXV114<br>CTXV116<br>CTXV116<br>CTXV116<br>CTXV116<br>CTXV116<br>CTXV117<br>CTXV118<br>CTXV121<br>CTXV121<br>CTXV122<br>CTXV122<br>CTXV123<br>CTXV123<br>CTXV125<br>CTXV125<br>CTXV125<br>CTXV125<br>CTXV126<br>CTXV126<br>CTXV127<br>CTXV127<br>CTXV128<br>CTXV128<br>CTXV128<br>CTXV128<br>CTXV128<br>CTXV128<br>CTXV128<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV129<br>CTXV12  | NoF-108         1037-10           NoF-108         103723           NoF-108         103723           NoF-108         103723           NoF-110         107724           NoF-1111         107874           NoF-121         107810           NoF-122         108152           NoF-122         108152           NoF-122         108152           NoF-123         107874           NoF-124         107874           NoF-125         107874           NoF-125         107874           NoF-126         107874           NoF-1272         1078704 </th <th>120         570           120         978           120         978           120         978           120         978           121         945           121         945           123         945           124         441           1285         2235           124         441           120         714           656         657           121         456           128         915           071         642           123         11           124         641           125         148           126         707           126         684           123         1107           1293         1656           670         453           464         675           124         11935           1277         822           1103         923           1264         675           224         1119           1230         2133           308         827</th> <th>(c)           (c)           (c)</th> <th>38.342           99.385           99.385           99.382           99.682           99.682           99.682           99.156           99.156           99.156           99.156           99.156           99.156           99.156           99.161           99.383           100           99.442           99.652           99.652           99.652           99.652           99.652           99.652           99.652           99.652           99.652           99.652           99.652           99.652           99.652           99.652           99.652           99.652           99.652           99.652           99.652           99.224           99.22617           99.392           99.718</th> <th>Mar 210         (Moz 340)           Mar 210         (Moz 340)           Mar 210         (Moz 340)           Mar 2100         (Moz 340)           Mar 2110         (Moz 310)           Mar 2110         (Moz 310)           Mar 2110         (Moz 310)           Mar 2110         (Moz 310)           Mar 2111         (Moz 310)           Mar 2111         (Moz 310)           Mar 2112         (Moz 310)           Mar 2113         (Moz 310)           Mar 2114         (Moz 310)           Mar 2115         (Moz 310)           Mar 212         (Moz 310)           Mar 212</th> <th><math display="block">\begin{array}{c} 276 \\ 278 \\ () \\ 288 \\ () \\ 288 \\ () \\ 288 \\ () \\ 288 \\ () \\ 2435 \\ (+) \\ 2435 \\ (+) \\ 2435 \\ (+) \\ 2435 \\ (+) \\ 2435 \\ (+) \\ 257 \\ (+) \\ 2578 \\ (+) \\ 2578 \\ (+) \\ 258 \\ (+) \\ 258 \\ (+) \\ 258 \\ (+) \\ 2486 \\ (+) \\ 2486 \\ (+) \\ 2486 \\ (+) \\ 2486 \\ (+) \\ 2486 \\ (+) \\ 2486 \\ (+) \\ 2486 \\ (+) \\ 2486 \\ (+) \\ 248 \\ (+) \\ (+) \\ 248 \\ (+) \\ (</math></th>
<th>99.69<br/>99.69<br/>99.74<br/>96.13<br/>99.88<br/>99.88<br/>99.40<br/>99.91<br/>99.15<br/>99.15<br/>98.16<br/>99.57<br/>100<br/>99.93<br/>100<br/>99.94<br/>51<br/>99.45<br/>100<br/>99.45<br/>100<br/>99.45<br/>100<br/>100<br/>100<br/>100<br/>100<br/>99.22<br/>99.23<br/>100<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.22<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>99.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25<br/>90.25</th> <th>North-100           North-108           North-108           North-108           North-108           North-108           North-107           North-111           North-112           North-123           North-123           North-124           North-125           North-127           North-128           North-127           North-128           North-129           North-129           North-120           North-121           North-129           North-129           North-129           North-129           North-130           North-131           North-132           North-131           North-131</th> <th>00418         10513           00418         105136           010136         107522           010719         108333           10927         112333           109315         10975           109315         10975           109315         10975           11232         11233           11232         11233           11425         11648           11525         11843           11525         11843           11525         12231           12306         12253           12318         12050           122525         12231           12306         12575           12406         12575           12407         12747           12914         13001           13005         13054           13046         13054           13046         133164</th> <th>5         978           3         238           3         258           4         7           945         441           3         2535           2         441           4         657           3         258           441         4           4         657           1         1914           4         9           486         915           9         642           2         747           1         1656           9         642           2         234           1         1656           5         882           2         234           1         1656           5         882           2         1119           8         2015           8         2115</th> <th>(c)<br/>(c)<br/>(c)<br/>(c)<br/>(c)<br/>(c)<br/>(c)<br/>(c)<br/>(c)<br/>(c)</th> <th>99.692<br/>99.748<br/>99.748<br/>99.623<br/>99.682<br/>99.682<br/>99.682<br/>99.408<br/>99.408<br/>99.408<br/>99.408<br/>99.408<br/>99.408<br/>99.408<br/>99.408<br/>99.402<br/>99.519<br/>99.524<br/>99.542<br/>99.542<br/>99.542<br/>99.542<br/>99.542<br/>99.552</th> <th>weith-100         103:20         102:20         978           weith-100         103:20         104:20         106:17         288           weith-110         103:20         218         106:20         106:21         218           weith-110         1070:21         621         621         626         545           weith-110         1070:24         105:865         545         545         545           weith-110         1070:24         105:865         545         545         545         545           weith-110         1070:24         105:865         1070:46         555         545         545         545           weith-111         1151:1172:27         714         545         557         546         547         558         546</th> <th>(a)         (b)           (c)         (c)           (c)         (c)</th> <th>100<br/>99385 39<br/>99537 39<br/>99537 39<br/>99537 39<br/>99537 39<br/>99537 39<br/>99537 30<br/>99537 30<br/>99547 30<br/>90547 30<br/>90547 30<br/>905557 30<br/>905557 30<br/>9055757 30<br/>9055757 30<br/>90</th>
<th>Swelt2-107<br/>Swelt2-107<br/>Swelt2-108<br/>Swelt2-108<br/>Swelt2-110<br/>Swelt2-110<br/>Swelt2-110<br/>Swelt2-110<br/>Swelt2-113<br/>Swelt2-113<br/>Swelt2-114<br/>Swelt2-115<br/>Swelt2-115<br/>Swelt2-117<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125</th> <th>102147<br/>103318<br/>104296<br/>106869<br/>107490<br/>108472<br/>108955<br/>111448<br/>111881<br/>112594<br/>11382<br/>115680<br/>117620<br/>118068<br/>119024<br/>119662<br/>120409<br/>122338<br/>126050<br/>129176<br/>128290<br/>129176<br/>128290<br/>129176</th> <th>102303<br/>104295<br/>104295<br/>104295<br/>104295<br/>10434<br/>108912<br/>111489<br/>112594<br/>113280<br/>115599<br/>115599<br/>115599<br/>115599<br/>115599<br/>115599<br/>115599<br/>115599<br/>115599<br/>115599<br/>115599<br/>115599<br/>115599<br/>115599<br/>124887<br/>12530<br/>12530<br/>12530<br/>12530<br/>12530<br/>12530<br/>12530<br/>12530<br/>12540<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>12550<br/>125500<br/>125500<br/>125500<br/>125500<br/>125500<br/>125500<br/>125500<br/>125500<br/>125500<br/>125</th> <th>278<br/>278<br/>2388<br/>621<br/>945<br/>945<br/>945<br/>945<br/>945<br/>945<br/>945<br/>945</th> <th></th> <th>99.385<br/>99.623<br/>98.544<br/>99.682<br/>99.682<br/>99.682<br/>99.89<br/>99.315<br/>99.156<br/>99.315<br/>99.156<br/>99.315<br/>99.156<br/>99.236<br/>100<br/>99.239<br/>100<br/>99.239<br/>100<br/>99.597<br/>99.819<br/>99.849<br/>99.849<br/>99.849<br/>99.849<br/>99.849<br/>99.8567<br/>100</th>  | 120         570           120         978           120         978           120         978           120         978           121         945           121         945           123         945           124         441           1285      
  2235           124         441           120         714           656         657           121         456           128         915           071         642           123         11           124         641           125         148           126         707           126         684           123         1107           1293         1656           670         453           464         675           124         11935           1277         822           1103         923           1264         675           224         1119           1230         2133           308         827   
   
   | (c)                             | 38.342           99.385           99.385           99.382           99.682           99.682           99.682           99.156           99.156           99.156           99.156           99.156           99.156           99.156           99.161           99.383           100           99.442           99.652           99.652           99.652           99.652           99.652           99.652           99.652           99.652           99.652           99.652           99.652           99.652           99.652           99.652           99.652           99.652           99.652           99.652           99.652           99.224           99.22617           99.392           99.718   
  | Mar 210         (Moz 340)           Mar 210         (Moz 340)           Mar 210         (Moz 340)           Mar 2100         (Moz 340)           Mar 2110         (Moz 310)           Mar 2110         (Moz 310)           Mar 2110         (Moz 310)           Mar 2110         (Moz 310)           Mar 2111         (Moz 310)           Mar 2111         (Moz 310)           Mar 2112         (Moz 310)           Mar 2113         (Moz 310)           Mar 2114         (Moz 310)           Mar 2115         (Moz 310)           Mar 212   
   
  | $\begin{array}{c} 276 \\ 278 \\ () \\ 288 \\ () \\ 288 \\ () \\ 288 \\ () \\ 288 \\ () \\ 2435 \\ (+) \\ 2435 \\ (+) \\ 2435 \\ (+) \\ 2435 \\ (+) \\ 2435 \\ (+) \\ 257 \\ (+) \\ 2578 \\ (+) \\ 2578 \\ (+) \\ 258 \\ (+) \\ 258 \\ (+) \\ 258 \\ (+) \\ 2486 \\ (+) \\ 2486 \\ (+) \\ 2486 \\ (+) \\ 2486 \\ (+) \\ 2486 \\ (+) \\ 2486 \\ (+) \\ 2486 \\ (+) \\ 2486 \\ (+) \\ 248 \\ (+) \\ (+) \\ 248 \\ (+) \\ ($  |
99.69<br>99.69<br>99.74<br>96.13<br>99.88<br>99.88<br>99.40<br>99.91<br>99.15<br>99.15<br>98.16<br>99.57<br>100<br>99.93<br>100<br>99.94<br>51<br>99.45<br>100<br>99.45<br>100<br>99.45<br>100<br>100<br>100<br>100<br>100<br>99.22<br>99.23<br>100<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.22<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>99.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25<br>90.25   | North-100           North-108           North-108           North-108           North-108           North-108           North-107           North-111           North-112           North-123           North-123           North-124           North-125           North-127           North-128           North-127           North-128           North-129           North-129           North-120           North-121           North-129           North-129           North-129           North-129           North-130           North-131           North-132           North-131           North-131   
   
   | 00418         10513           00418         105136           010136         107522           010719         108333           10927         112333           109315         10975           109315         10975           109315         10975           11232         11233           11232         11233           11425         11648           11525         11843           11525         11843           11525         12231           12306         12253           12318         12050           122525         12231           12306         12575           12406         12575           12407         12747           12914         13001           13005         13054           13046         13054           13046         133164  | 5         978           3         238           3         258           4         7           945         441           3         2535           2         441           4         657           3         258           441         4           4         657           1         1914           4         9           486         915           9         642           2         747           1         1656           9         642           2         234           1         1656           5         882           2         234           1         1656           5         882           2         1119           8         2015           8         2115  | (c)<br>(c)<br>(c)<br>(c)<br>(c)<br>(c)<br>(c)<br>(c)<br>(c)<br>(c)  | 99.692<br>99.748<br>99.748<br>99.623<br>99.682<br>99.682<br>99.682<br>99.408<br>99.408<br>99.408<br>99.408<br>99.408<br>99.408<br>99.408<br>99.408<br>99.402<br>99.519<br>99.524<br>99.542<br>99.542<br>99.542<br>99.542<br>99.542<br>99.552   
  | weith-100         103:20         102:20         978           weith-100         103:20         104:20         106:17         288           weith-110         103:20         218         106:20         106:21         218           weith-110         1070:21         621         621         626         545           weith-110         1070:24         105:865         545         545         545           weith-110         1070:24         105:865         545         545         545         545           weith-110         1070:24         105:865         1070:46         555         545         545         545           weith-111         1151:1172:27         714         545         557         546         547         558         546   
   | (a)         (b)           (c)         (c)   
  | 100<br>99385 39<br>99537 39<br>99537 39<br>99537 39<br>99537 39<br>99537 39<br>99537 30<br>99537 30<br>99547 30<br>90547 30<br>90547 30<br>905557 30<br>905557 30<br>9055757 30<br>9055757 30<br>90  
   | Swelt2-107<br>Swelt2-107<br>Swelt2-108<br>Swelt2-108<br>Swelt2-110<br>Swelt2-110<br>Swelt2-110<br>Swelt2-110<br>Swelt2-113<br>Swelt2-113<br>Swelt2-114<br>Swelt2-115<br>Swelt2-115<br>Swelt2-117<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125  | 102147<br>103318<br>104296<br>106869<br>107490<br>108472<br>108955<br>111448<br>111881<br>112594<br>11382<br>115680<br>117620<br>118068<br>119024<br>119662<br>120409<br>122338<br>126050<br>129176<br>128290<br>129176<br>128290<br>129176  |
102303<br>104295<br>104295<br>104295<br>104295<br>10434<br>108912<br>111489<br>112594<br>113280<br>115599<br>115599<br>115599<br>115599<br>115599<br>115599<br>115599<br>115599<br>115599<br>115599<br>115599<br>115599<br>115599<br>115599<br>124887<br>12530<br>12530<br>12530<br>12530<br>12530<br>12530<br>12530<br>12530<br>12540<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>12550<br>125500<br>125500<br>125500<br>125500<br>125500<br>125500<br>125500<br>125500<br>125500<br>125          | 278<br>278<br>2388<br>621<br>945<br>945<br>945<br>945<br>945<br>945<br>945<br>945  |  | 99.385<br>99.623<br>98.544<br>99.682<br>99.682<br>99.682<br>99.89<br>99.315<br>99.156<br>99.315<br>99.156<br>99.315<br>99.156<br>99.236<br>100<br>99.239<br>100<br>99.239<br>100<br>99.597<br>99.819<br>99.849<br>99.849<br>99.849<br>99.849<br>99.849<br>99.8567<br>100  
   |
| INV is parth billing surface protein (Cop-HSL)<br>RAP4 (RN) pad assoc protein (Cop-HSL)<br>RAP4 (RN) pad assoc protein (Cop-HSL)<br>(Cop-HSL)<br>DNA toposisemerase type I (Cop-HSR)<br>(CYP-8-116<br>Wind membrane assembly proteins (VMAP) (Cop-HT R)<br>Minis core (Cop-D2L)<br>Winds core (Cop-D2L)<br>Winds core (Cop-D2L)<br>Winds core (Cop-D2L)<br>Winds core (Cop-D2L)<br>Winds core (Cop-D3R)<br>United DNA (proteins DNA polymerase processi wity factor (Cop-D4R)<br>NTPase, DNA primate (Cop-D5R)<br>Morphogenesis, VETPS (corb Vinascription factor small) (Cop-D6R)<br>RNA adpropting corps: VETPS (corb Vinascription factor small) (Cop-D6R)<br>RNA adpropting corps: VETPS (corb Vinascription factor small) (Cop-D6R)<br>RNA adpropting corps: VETPS (corb Vinascription factor small) (Cop-D6R)<br>mRNA adecapping corps (Cop-D1R)<br>mRNA adecapping corps (Cop-D1R)<br>mRNA adpending corps: VETPS (Cop-D1L)<br>MTP-3 (due transcription factor 3: (Cop-D1L)<br>VI_TF3-3 (due transcription factor 3: (Cop-D1L)<br>VI_TF3-3 (due transcription factor 3: (Cop-D1L)<br>VI_TF3-3 (due transcription factor 3: (Cop-D3L)<br>VI_TF3-3 (due transcription factor 3: (Cop-D3L)<br>SNDA string corps (Cop-A3L)<br>SNDA string corps (Cop-A3L)<br>SNDA string corps (Cop-A3L)<br>SNDA string corps (Cop-A3L)<br>SNDA string corps (Cop-A3R)<br>SNDA string corps (  | H3L           H4L           H4R           H5R           H6R           D1R           D2L           D3R           D4R           D5R           D6R           D7R           D0R           D6R           D7R           D10R           D10R           D10R           D10R           D10R           D10R           D10R           D11L           D12L           ·           D13L           A1L           A2L           A3L           A4L           A5R           A6L           A7L   | CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVIII<br>CTXVII  | NoF-10         1037-10           NoF-100         103723           NoF-100         103723           NoF-100         103723           NoF-110         103723           NoF-1111         107274           NoF-1111         107375           NoF-1111         107574           NoF-1111         107585           NoF-1111         107587           NoF-1111         107587           NoF-1111         107587           NoF-1111         107587           NoF-1111         103861           NoF-1111         103861           NoF-1111         103861           NoF-1111         103861           NoF-1111         103861           NoF-121         10430           NoF-121         10430           NoF-122         20061           NoF-122         20051           NoF-122         20051           NoF-123         20061           NoF-124         20740           NoF-125         20301           NoF-130         208067           NoF-131         203405           NoF-131         203405           NoF-131         203405  
   
   
  | 120         570           120         978           00         978           0088         2388           0884         621           3839         945           945         945           945         945           945         945           945         945           945         945           945         945           945         945           945         945           945         945           945         945           945         945           945         945           945         945           945         945           946         945           947         944           948         947           947         945           945         945           945         945           945         945           946         945           946         675           9464         675           9464         945           945         945           945         945           9464<   
   
   
  | (c)   | 38.342           99.383           99.623           99.682           99.682           99.682           99.682           99.526           99.315           99.156           98.63           99.156           99.156           99.19           99.379           99.39           99.39           99.39           99.39           99.39           99.39           99.39           99.42           99.637           100           100           99.631           100           99.632           99.633           99.637           100           99.39           99.424           99.39           99.39      99.39           99.39           99.39           99.39           99.39           99.39           99.39           99.39           99.39           99.39           99.39           99.718           100   | Nu-210         (1902)         (1902)           Nu-210         (1902)         (1917)           Nu-210         (1973)         (1934)           Nu-2110         (1973)         (1934)           Nu-2110         (1973)         (1934)           Nu-2110         (1973)         (1934)           Nu-2111         (1987)         (1934)           Nu-2112         (1934)         (1134)           Nu-2113         (1934)         (1134)           Nu-2114         (1134)         (1134)           Nu-2115         (1136)         (1135)           Nu-2116         (1136)         (1134)           Nu-2116         (1136)         (1135)           Nu-2116         (1136)         (1134)           Nu-2116         (1136)         (1135)           Nu-2116         (1136)         (1135)           Nu-2121         (1136)         (1137)           Nu-2121         (1132)         (1136)           Nu-2121         (1132)         (1137)           Nu-2121         (1132)         (1136)           Nu-2121         (1137)         (1137)           Nu-2121         (1137)         (1137)           Nu   
   
   | $\begin{array}{cccccccccccccccccccccccccccccccccccc$  
   | 99.69<br>99.74<br>99.74<br>99.74<br>99.74<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>99.75<br>100<br>100<br>100<br>100<br>100<br>100<br>99.72<br>100<br>100<br>100<br>100<br>100<br>100<br>99.72<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>10  | Nath: 100           Nath: 101           Nath: 108           Nath: 101           Nath: 112           Nath: 113           Nath: 115           Nath: 115           Nath: 116           Nath: 117           Nath: 117           Nath: 117           Nath: 121           Nath: 128           Nath: 128           Nath: 128           Nath: 128           Nath: 121           Nath: 121 <td< th=""><th>10015         10075           10015         10752           100156         107522           100157         108333           10927         107333           109315         10975           109315         10975           109315         110975           11222         112333           11222         112333           11425         116433           11425         116433           11425         116433           11426         116484           118456         11849           118456         11849           118456         11849           118456         11849           118456         11849           118456         11849           118456         11849           118456         11849           118456         11849           118456         11849           118456         11849           1192575         1262016           1192575         1262016           1192575         1262016           1192575         1262016           1192575         1262016           1192575         12</th><th>s         978           3         258           3         258           41         677           945         241           3         2528           44         677           945         241           8         714           9         486           9         642           7         1914           9         486           9         642           7         1914           9         486           9         642           7         435           2         741           1         1656           7         495           2         234           1         1856           2         234           1955         2111           98         807           2         213           8         887</th><th>(·)           (·)</th><th>99,692<br/>99,748<br/>99,748<br/>99,632<br/>99,682<br/>99,488<br/>99,488<br/>99,488<br/>99,488<br/>99,488<br/>99,488<br/>99,488<br/>99,488<br/>99,482<br/>99,482<br/>99,552<br/>99,552<br/>100<br/>100<br/>99,542<br/>99,552<br/>100<br/>100<br/>99,224<br/>99,552<br/>100<br/>100<br/>99,224<br/>99,552<br/>100<br/>100<br/>99,224<br/>99,552<br/>100<br/>100<br/>100<br/>99,552<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>10</th><th>Beam-Roll         Bosco         Processor           Beam-Roll         Bosco         Processor           Weill-1-00         Bosco         Processor           Weill-1-00         Bosco         Processor           Weill-1-101         Processor         &lt;</th><th>(i)           (i)           (i)           (i)           (ii)           (iii)           (iiiiiiii)  </th><th>100         99,385         99,385           99,682         99,682         99,682           99,682         99,682         99,289           99,289         99,156         99,236           99,156         99,156         100           99,310         100         99,371           99,824         100         100           99,819         100         100           99,819         100         100           99,819         100         100           99,819         99,819         99,819           99,810         100         100           99,819         99,819         99,819           99,819         99,819         99,819           99,819         99,819         99,819           99,819         99,819         99,819           100         99,879         100           99,971         100         99,879           99,718         84,877        
99,718</th><th>Swelt2-107<br/>Swelt2-107<br/>Swelt2-108<br/>Swelt2-108<br/>Swelt2-109<br/>Swelt2-110<br/>Swelt2-110<br/>Swelt2-110<br/>Swelt2-110<br/>Swelt2-115<br/>Swelt2-115<br/>Swelt2-115<br/>Swelt2-115<br/>Swelt2-115<br/>Swelt2-115<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125<br/>Swelt2-125</th><th>102147<br/>103318<br/>104296<br/>105869<br/>107490<br/>108472<br/>108955<br/>111448<br/>11881<br/>112594<br/>113282<br/>115680<br/>117620<br/>111259<br/>1112594<br/>113088<br/>119024<br/>113088<br/>119024<br/>112055<br/>126300<br/>129176<br/>128290<br/>128290<br/>128290<br/>128290<br/>128290<br/>129677<br/>130809<br/>132995</th><th>104295<br/>104295<br/>106833<br/>107489<br/>108434<br/>108912<br/>11489<br/>111888<br/>112594<br/>114892<br/>1118982<br/>119665<br/>120408<br/>122594<br/>115639<br/>118982<br/>12965<br/>120487<br/>123201<br/>124887<br/>122304<br/>123563<br/>12965<br/>120488<br/>123563<br/>12965<br/>120488<br/>123563<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12965<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975<br/>12975</th><th>278<br/>278<br/>278<br/>278<br/>441<br/>2535<br/>441<br/>2535<br/>441<br/>2535<br/>441<br/>714<br/>453<br/>657<br/>2358<br/>486<br/>915<br/>248<br/>667<br/>747<br/>747<br/>747<br/>747<br/>896<br/>864<br/>453<br/>675<br/>231<br/>238<br/>864<br/>105<br/>231<br/>238<br/>849<br/>238<br/>849<br/>238<br/>849<br/>238<br/>849<br/>238<br/>849<br/>238<br/>849<br/>245<br/>238<br/>245<br/>245<br/>245<br/>245<br/>245<br/>245<br/>245<br/>245</th><th></th><th>99.385<br/>99.385<br/>99.623<br/>98.544<br/>99.623<br/>99.289<br/>99.289<br/>99.315<br/>99.135<br/>99.135<br/>99.315<br/>99.280<br/>100<br/>99.236<br/>100<br/>99.236<br/>100<br/>99.9319<br/>99.842<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>10</th></td<>  
  | 10015         10075           10015         10752           100156         107522           100157         108333           10927         107333           109315         10975           109315         10975           109315         110975           11222         112333           11222         112333           11425         116433           11425         116433           11425         116433           11426         116484           118456         11849           118456         11849           118456         11849           118456         11849           118456         11849           118456         11849           118456         11849           118456         11849           118456         11849           118456         11849           118456         11849           1192575         1262016           1192575         1262016           1192575         1262016           1192575         1262016           1192575         1262016           1192575         12  | s         978           3         258           3         258           41         677           945         241           3         2528           44         677           945         241           8         714           9         486           9         642           7         1914           9         486           9         642           7         1914           9         486           9         642           7         435           2         741           1         1656           7         495           2         234           1         1856           2         234           1955         2111           98         807           2         213           8         887  | (·)             | 99,692<br>99,748<br>99,748<br>99,632<br>99,682<br>99,488<br>99,488<br>99,488<br>99,488<br>99,488<br>99,488<br>99,488<br>99,488<br>99,482<br>99,482<br>99,552<br>99,552<br>100<br>100<br>99,542<br>99,552<br>100<br>100<br>99,224<br>99,552<br>100<br>100<br>99,224<br>99,552<br>100<br>100<br>99,224<br>99,552<br>100<br>100<br>100<br>99,552<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>10  
   | Beam-Roll         Bosco         Processor           Beam-Roll         Bosco         Processor           Weill-1-00         Bosco         Processor           Weill-1-00         Bosco         Processor           Weill-1-101         Processor         <  | (i)           (i)           (i)           (i)        
  (ii)           (iii)           (iiiiiiii)  
   | 100         99,385         99,385           99,682         99,682         99,682           99,682         99,682         99,289           99,289         99,156         99,236           99,156         99,156         100           99,310         100         99,371           99,824         100         100           99,819         100         100           99,819         100         100           99,819         100         100           99,819         99,819         99,819           99,810         100         100           99,819         99,819         99,819           99,819         99,819         99,819           99,819         99,819         99,819           99,819         99,819         99,819           100         99,879         100           99,971         100         99,879           99,718         84,877         99,718  
  | Swelt2-107<br>Swelt2-107<br>Swelt2-108<br>Swelt2-108<br>Swelt2-109<br>Swelt2-110<br>Swelt2-110<br>Swelt2-110<br>Swelt2-110<br>Swelt2-115<br>Swelt2-115<br>Swelt2-115<br>Swelt2-115<br>Swelt2-115<br>Swelt2-115<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125<br>Swelt2-125  | 102147<br>103318<br>104296<br>105869<br>107490<br>108472<br>108955<br>111448<br>11881<br>112594<br>113282<br>115680<br>117620<br>111259<br>1112594<br>113088<br>119024<br>113088<br>119024<br>112055<br>126300<br>129176<br>128290<br>128290<br>128290<br>128290<br>128290<br>129677<br>130809<br>132995   
   | 104295<br>104295<br>106833<br>107489<br>108434<br>108912<br>11489<br>111888<br>112594<br>114892<br>1118982<br>119665<br>120408<br>122594<br>115639<br>118982<br>12965<br>120487<br>123201<br>124887<br>122304<br>123563<br>12965<br>120488<br>123563<br>12965<br>120488<br>123563<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12965<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975<br>12975       | 278<br>278<br>278<br>278<br>441<br>2535<br>441<br>2535<br>441<br>2535<br>441<br>714<br>453<br>657<br>2358<br>486<br>915<br>248<br>667<br>747<br>747<br>747<br>747<br>896<br>864<br>453<br>675<br>231<br>238<br>864<br>105<br>231<br>238<br>849<br>238<br>849<br>238<br>849<br>238<br>849<br>238<br>849<br>238<br>849<br>245<br>238<br>245<br>245<br>245<br>245<br>245<br>245<br>245<br>245   |  | 99.385<br>99.385<br>99.623<br>98.544<br>99.623<br>99.289<br>99.289<br>99.315<br>99.135<br>99.135<br>99.315<br>99.280<br>100<br>99.236<br>100<br>99.236<br>100<br>99.9319<br>99.842<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>10  
  |
| IMV legarin hinding surface prote in (Cop-HSL) EATP4 (RX) pat assoc protein (Cop-HSL) EATP4 (RX) pat assoc protein (Cop-HSL) UTF4 (Inter transpring for Inter4 - (Lop-HSR) (Cry-8-116 Viral neuron large submit (Cop-HSR) (Cry-8-116 Viral neuron large submit (Cop-DIR) Viran ores (Cop-DSR) Viran ores (Cop-DSR) Urined ores (Cop-DSR) Urine (Cop-SSR) Urined ores (Cop-SSR) Urine (Cop-SSR) Urined ores (Cop-Urined (Cop-SSR) Urined ores (Cop-SSR) U   | IEIL           IHL           IHR           IHR           IFR           DIR           AL     | CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL2<br>CTAVIL  | NoF-108         1037-10           NoF-108         103723           NoF-108         103723           NoF-108         103723           NoF-108         103723           NoF-1110         107724           NoF-1111         107875           NoF-1111         107875           NoF-1111         107876           NoF-1111         107874           NoF-111         107874           NoF-111         107874           NoF-111         10786           NoF-111         10886           NoF-121         107810           NoF-122         20815           NoF-122         20815           NoF-123         20815           NoF-124         20861           NoF-125         20861           NoF-126         20861           NoF-127         157001           NoF-131         20865           NoF-133         128645   
   
   
   | 120         570           120         978           120         978           100         978           1088         2388           1088         2388           117         441           1189         945           111         441           116         665           117         99           114         4665           117         99           114         486           300         716           11896         607           11896         607           11896         617           11896         617           1193         1656           1193         1656           1193         1656           1193         1656           1193         193           1193         193           1193         193           1193         193           1109         495           1119         300           1133         308           1133         308           1133         308           1133           1   
   
   | (c)           (c) | 38.342           99.385           99.362           99.3782           99.3782           99.3782           99.3782           99.379           99.379           99.156           99.379           99.156           99.379           99.379           99.379           99.379           99.379           99.379           99.379           99.379           99.379           99.379           99.379           99.379           99.379           99.379           99.379           99.379           99.370           99.370           99.370           99.370           99.370           99.371           99.3842           99.371           99.244           99.234           99.319           99.310           99.310           99.311           99.312           99.313           99.313           99.314           99.317           <   
  | NG-210         (NGA)           NG-211         (NGA)           NG-212         (NGA)           NG-212         (NGA)           NG-212         (NGA)           NG-213         (NGA)           NG-214         (NGA)           NG-215         (NGA)           NG-216         (NGA)           NG-217         (NGA)           NG-218         (NGA) <th><math display="block">\begin{array}{c} 2776 &amp; (\cdot) \\ 2788 &amp; (\cdot) \\ 2888 &amp; (\cdot) \\ 624 &amp; (\cdot) \\ 945 &amp; (\cdot) \\ 945 &amp; (\cdot) \\ 441 &amp; (\cdot) \\ 2435 &amp; (\cdot) \\ 441 &amp; (\cdot) \\ 2435 &amp; (\cdot) \\ 441 &amp; (\cdot) \\ 2578 &amp; (\cdot) \\ 1914 &amp; (\cdot) \\ 486 &amp; (\cdot) \\ 1914 &amp; (\cdot) \\ 1915 &amp; (\cdot) \\ 1914 &amp; (\cdot) \\ 1914 &amp; (\cdot) \\ 1914 &amp; (\cdot) \\ 1915 &amp; (\cdot) \\ 1914 &amp; (\cdot) \\ 1914 &amp; (\cdot) \\ 1915 &amp; (\cdot) \\ 1915 &amp; (\cdot) \\ 1914 &amp; (\cdot) \\ 1915 &amp; (</math></th> <th>99.69<br/>99.74<br/>99.74<br/>99.74<br/>99.61<br/>99.65<br/>99.68<br/>99.95<br/>99.57<br/>99.57<br/>99.57<br/>100<br/>99.57<br/>100<br/>99.57<br/>100<br/>99.57<br/>99.57<br/>100<br/>99.57<br/>100<br/>99.57<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>10</th> <th>Nath1-107           Nath1-108           Nath1-108           Nath1-108           Nath1-108           Nath1-108           Nath1-108           Nath1-108           Nath1-108           Nath1-108           Nath1-111           Nath1-111           Nath1-111           Nath1-111           Nath1-111           Nath1-111           Nath1-112           Nath1-121           Nath1-123           Nath1-133           Nath1-133           <td< th=""><th>004158 0013158 001576 0019 0019 0019 0019 0019 0019 0019 001</th><th>s         978           3         238           3         238           4         67           945         441           3         2358           4         67           945         441           3         2358           4         67           7         945           2         441           8         714           4         67           7         1914           4         67           915         864           1         1656           915         864           1         1655           5         862           2         2135           5         882           2         113           8         113           8         867           2         1119           8         2867</th><th>(·)           (·)</th><th>99.692<br/>99.748<br/>99.748<br/>99.682<br/>99.682<br/>99.682<br/>99.682<br/>99.682<br/>99.682<br/>99.585<br/>99.156<br/>98.599<br/>99.157<br/>99.570<br/>99.570<br/>99.570<br/>99.572<br/>99.572<br/>99.542<br/>99.542<br/>99.542<br/>99.542<br/>99.542<br/>99.542<br/>99.542<br/>99.542<br/>99.542<br/>99.542<br/>99.542<br/>99.542<br/>99.545<br/>100<br/>99.542</th><th>weith-100         01322         01429         978           weith-100         01322         01429         978           weith-110         01322         0120         0120           weith-110         01372         828         985           weith-110         01372         828         985           weith-110         01372         828         985           weith-110         01372         821         985           weith-110         01372         828         985           weith-111         01841         1132         235           weith-111         11321         1132         435           weith-111         11341         11372         914           weith-111         11341         11372         914           weith-111         11341         11372         914           weith-111         11341         11372         914           weith-111         11341         11329         445           weith-111         11341         11372         914           weith-111         11341         11372         914           weith-111         11341         11374         914         915</th><th>(i)           (i)           (i)           (i)           (ii)           (iii)           (iiiiiiiii)          
(iiiii)<th>100<br/>99.385<br/>99.623<br/>99.624<br/>99.624<br/>99.620<br/>99.620<br/>99.620<br/>99.620<br/>99.620<br/>99.620<br/>99.620<br/>99.620<br/>99.319<br/>99.319<br/>99.319<br/>99.319<br/>99.319<br/>99.319<br/>99.319<br/>99.319<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>90.500<br/>90.500<br/>90.500<br/>90.500<br/>90.500<br/>90.500<br/>90.500<br/>90.5000<br/>90.5</th><th>Swelf2-107<br/>Swelf2-107<br/>Swelf2-108<br/>Swelf2-108<br/>Swelf2-110<br/>Swelf2-110<br/>Swelf2-110<br/>Swelf2-112<br/>Swelf2-113<br/>Swelf2-113<br/>Swelf2-114<br/>Swelf2-117<br/>Swelf2-117<br/>Swelf2-117<br/>Swelf2-117<br/>Swelf2-117<br/>Swelf2-122<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123</th><th>102147<br/>102318<br/>104296<br/>106869<br/>107490<br/>108472<br/>108955<br/>101448<br/>11881<br/>11881<br/>112594<br/>113282<br/>115680<br/>117620<br/>118068<br/>117620<br/>118068<br/>117620<br/>118068<br/>119024<br/>119024<br/>119024<br/>119024<br/>119024<br/>119024<br/>119024<br/>119024<br/>119024<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>1200</th><th>103203<br/>104295<br/>106683<br/>107489<br/>108434<br/>108912<br/>111489<br/>111489<br/>111489<br/>111489<br/>111489<br/>111559<br/>115599<br/>115599<br/>115599<br/>115599<br/>115599<br/>115599<br/>115599<br/>115599<br/>115599<br/>115599<br/>12204<br/>12304<br/>12304<br/>12304<br/>122045<br/>126265<br/>126255<br/>126255<br/>126255<br/>126255<br/>126255<br/>126255<br/>126255<br/>126255<br/>126255<br/>126255<br/>126255<br/>126255<br/>129676<br/>139675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>12967
5<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675</th><th>278<br/>278<br/>2382<br/>441<br/>2535<br/>441<br/>2535<br/>441<br/>2535<br/>441<br/>2535<br/>441<br/>714<br/>714<br/>456<br/>915<br/>642<br/>747<br/>1896<br/>864<br/>453<br/>565<br/>915<br/>915<br/>945<br/>915<br/>945<br/>915<br/>915<br/>915<br/>945<br/>915<br/>915<br/>915<br/>915<br/>915<br/>915<br/>915<br/>91</th><th></th><th>99.385<br/>99.623<br/>98.544<br/>99.682<br/>97.945<br/>99.289<br/>99.289<br/>99.155<br/>97.706<br/>99.256<br/>99.256<br/>99.156<br/>99.156<br/>99.379<br/>99.379<br/>99.379<br/>99.577<br/>100<br/>99.579<br/>100<br/>99.842<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>100<br/>100<br/>99.849<br/>100<br/>100<br/>100<br/>100<br/>99.849<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>10</th></th></td<></th>   | $\begin{array}{c} 2776 & (\cdot) \\ 2788 & (\cdot) \\ 2888 & (\cdot) \\ 624 & (\cdot) \\ 945 & (\cdot) \\ 945 & (\cdot) \\ 441 & (\cdot) \\ 2435 & (\cdot) \\ 441 & (\cdot) \\ 2435 & (\cdot) \\ 441 & (\cdot) \\ 2578 & (\cdot) \\ 1914 & (\cdot) \\ 486 & (\cdot) \\ 1914 & (\cdot) \\ 1915 & (\cdot) \\ 1914 & (\cdot) \\ 1914 & (\cdot) \\ 1914 & (\cdot) \\ 1915 & (\cdot) \\ 1914 & (\cdot) \\ 1914 & (\cdot) \\ 1915 & (\cdot) \\ 1915 & (\cdot) \\ 1914 & (\cdot) \\ 1915 & ($ | 99.69<br>99.74<br>99.74<br>99.74<br>99.61<br>99.65<br>99.68<br>99.95<br>99.57<br>99.57<br>99.57<br>100<br>99.57<br>100<br>99.57<br>100<br>99.57<br>99.57<br>100<br>99.57<br>100<br>99.57<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>10  | Nath1-107           Nath1-108           Nath1-108           Nath1-108           Nath1-108           Nath1-108           Nath1-108           Nath1-108           Nath1-108           Nath1-108           Nath1-111           Nath1-111           Nath1-111           Nath1-111           Nath1-111           Nath1-111           Nath1-112           Nath1-121           Nath1-123           Nath1-133           Nath1-133 <td< th=""><th>004158 0013158 001576 0019
0019 0019 0019 0019 0019 0019 001</th><th>s         978           3         238           3         238           4         67           945         441           3         2358           4         67           945         441           3         2358           4         67           7         945           2         441           8         714           4         67           7         1914           4         67           915         864           1         1656           915         864           1         1655           5         862           2         2135           5         882           2         113           8         113           8         867           2         1119           8         2867</th><th>(·)           (·)</th><th>99.692<br/>99.748<br/>99.748<br/>99.682<br/>99.682<br/>99.682<br/>99.682<br/>99.682<br/>99.682<br/>99.585<br/>99.156<br/>98.599<br/>99.157<br/>99.570<br/>99.570<br/>99.570<br/>99.572<br/>99.572<br/>99.542<br/>99.542<br/>99.542<br/>99.542<br/>99.542<br/>99.542<br/>99.542<br/>99.542<br/>99.542<br/>99.542<br/>99.542<br/>99.542<br/>99.545<br/>100<br/>99.542</th><th>weith-100         01322         01429         978           weith-100         01322         01429         978           weith-110         01322         0120         0120           weith-110         01372         828         985           weith-110         01372         828         985           weith-110         01372         828         985           weith-110         01372         821         985           weith-110         01372         828         985           weith-111         01841         1132         235           weith-111         11321         1132         435           weith-111         11341         11372         914           weith-111         11341         11372         914           weith-111         11341         11372         914           weith-111         11341         11372         914           weith-111         11341         11329         445           weith-111         11341         11372         914           weith-111         11341         11372         914           weith-111         11341         11374         914         915</th><th>(i)           (i)           (i)           (i)           (ii)           (iii)           (iiiiiiiii)          
(iiiii)<th>100<br/>99.385<br/>99.623<br/>99.624<br/>99.624<br/>99.620<br/>99.620<br/>99.620<br/>99.620<br/>99.620<br/>99.620<br/>99.620<br/>99.620<br/>99.319<br/>99.319<br/>99.319<br/>99.319<br/>99.319<br/>99.319<br/>99.319<br/>99.319<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>90.500<br/>90.500<br/>90.500<br/>90.500<br/>90.500<br/>90.500<br/>90.500<br/>90.5000<br/>90.5</th><th>Swelf2-107<br/>Swelf2-107<br/>Swelf2-108<br/>Swelf2-108<br/>Swelf2-110<br/>Swelf2-110<br/>Swelf2-110<br/>Swelf2-112<br/>Swelf2-113<br/>Swelf2-113<br/>Swelf2-114<br/>Swelf2-117<br/>Swelf2-117<br/>Swelf2-117<br/>Swelf2-117<br/>Swelf2-117<br/>Swelf2-122<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123</th><th>102147<br/>102318<br/>104296<br/>106869<br/>107490<br/>108472<br/>108955<br/>101448<br/>11881<br/>11881<br/>112594<br/>113282<br/>115680<br/>117620<br/>118068<br/>117620<br/>118068<br/>117620<br/>118068<br/>119024<br/>119024<br/>119024<br/>119024<br/>119024<br/>119024<br/>119024<br/>119024<br/>119024<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>1200</th><th>103203<br/>104295<br/>106683<br/>107489<br/>108434<br/>108912<br/>111489<br/>111489<br/>111489<br/>111489<br/>111489<br/>111559<br/>115599<br/>115599<br/>115599<br/>115599<br/>115599<br/>115599<br/>115599<br/>115599<br/>115599<br/>115599<br/>12204<br/>12304<br/>12304<br/>12304<br/>122045<br/>126265<br/>126255<br/>126255<br/>126255<br/>126255<br/>126255<br/>126255<br/>126255<br/>126255<br/>126255<br/>126255<br/>126255<br/>126255<br/>129676<br/>139675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>12967
5<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675</th><th>278<br/>278<br/>2382<br/>441<br/>2535<br/>441<br/>2535<br/>441<br/>2535<br/>441<br/>2535<br/>441<br/>714<br/>714<br/>456<br/>915<br/>642<br/>747<br/>1896<br/>864<br/>453<br/>565<br/>915<br/>915<br/>945<br/>915<br/>945<br/>915<br/>915<br/>915<br/>945<br/>915<br/>915<br/>915<br/>915<br/>915<br/>915<br/>915<br/>91</th><th></th><th>99.385<br/>99.623<br/>98.544<br/>99.682<br/>97.945<br/>99.289<br/>99.289<br/>99.155<br/>97.706<br/>99.256<br/>99.256<br/>99.156<br/>99.156<br/>99.379<br/>99.379<br/>99.379<br/>99.577<br/>100<br/>99.579<br/>100<br/>99.842<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>100<br/>100<br/>99.849<br/>100<br/>100<br/>100<br/>100<br/>99.849<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>10</th></th></td<>   | 004158 0013158 001576 0019 0019 0019 0019 0019 0019 0019 001  | s         978           3         238           3         238           4         67           945         441           3         2358           4         67           945         441           3         2358           4         67           7         945           2         441           8         714           4         67           7         1914           4         67           915         864
          1         1656           915         864           1         1655           5         862           2         2135           5         882           2         113           8         113           8         867           2         1119           8         2867   | (·)             | 99.692<br>99.748<br>99.748<br>99.682<br>99.682<br>99.682<br>99.682<br>99.682<br>99.682<br>99.585<br>99.156<br>98.599<br>99.157<br>99.570<br>99.570<br>99.570<br>99.572<br>99.572<br>99.542<br>99.542<br>99.542<br>99.542<br>99.542<br>99.542<br>99.542<br>99.542<br>99.542<br>99.542<br>99.542<br>99.542<br>99.545<br>100<br>99.542   | weith-100         01322         01429         978           weith-100         01322         01429         978           weith-110         01322         0120         0120           weith-110         01372         828         985           weith-110         01372         828         985           weith-110         01372         828         985           weith-110         01372         821         985           weith-110         01372         828         985           weith-111         01841         1132         235           weith-111         11321         1132         435           weith-111         11341         11372         914           weith-111         11341         11372         914           weith-111         11341         11372         914           weith-111         11341         11372         914           weith-111         11341         11329         445           weith-111         11341         11372         914           weith-111         11341         11372         914           weith-111         11341         11374         914         915   
  | (i)           (i)           (i)           (i)           (ii)           (iii)           (iiiiiiiii)           (iiiii) <th>100<br/>99.385<br/>99.623<br/>99.624<br/>99.624<br/>99.620<br/>99.620<br/>99.620<br/>99.620<br/>99.620<br/>99.620<br/>99.620<br/>99.620<br/>99.319<br/>99.319<br/>99.319<br/>99.319<br/>99.319<br/>99.319<br/>99.319<br/>99.319<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.320<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>99.520<br/>90.500<br/>90.500<br/>90.500<br/>90.500<br/>90.500<br/>90.500<br/>90.500<br/>90.5000<br/>90.5</th> <th>Swelf2-107<br/>Swelf2-107<br/>Swelf2-108<br/>Swelf2-108<br/>Swelf2-110<br/>Swelf2-110<br/>Swelf2-110<br/>Swelf2-112<br/>Swelf2-113<br/>Swelf2-113<br/>Swelf2-114<br/>Swelf2-117<br/>Swelf2-117<br/>Swelf2-117<br/>Swelf2-117<br/>Swelf2-117<br/>Swelf2-122<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123<br/>Swelf2-123</th>
<th>102147<br/>102318<br/>104296<br/>106869<br/>107490<br/>108472<br/>108955<br/>101448<br/>11881<br/>11881<br/>112594<br/>113282<br/>115680<br/>117620<br/>118068<br/>117620<br/>118068<br/>117620<br/>118068<br/>119024<br/>119024<br/>119024<br/>119024<br/>119024<br/>119024<br/>119024<br/>119024<br/>119024<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>12035<br/>1200</th> <th>103203<br/>104295<br/>106683<br/>107489<br/>108434<br/>108912<br/>111489<br/>111489<br/>111489<br/>111489<br/>111489<br/>111559<br/>115599<br/>115599<br/>115599<br/>115599<br/>115599<br/>115599<br/>115599<br/>115599<br/>115599<br/>115599<br/>12204<br/>12304<br/>12304<br/>12304<br/>122045<br/>126265<br/>126255<br/>126255<br/>126255<br/>126255<br/>126255<br/>126255<br/>126255<br/>126255<br/>126255<br/>126255<br/>126255<br/>126255<br/>129676<br/>139675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675<br/>129675</th> <th>278<br/>278<br/>2382<br/>441<br/>2535<br/>441<br/>2535<br/>441<br/>2535<br/>441<br/>2535<br/>441<br/>714<br/>714<br/>456<br/>915<br/>642<br/>747<br/>1896<br/>864<br/>453<br/>565<br/>915<br/>915<br/>945<br/>915<br/>945<br/>915<br/>915<br/>915<br/>945<br/>915<br/>915<br/>915<br/>915<br/>915<br/>915<br/>915<br/>91</th> <th></th> <th>99.385<br/>99.623<br/>98.544<br/>99.682<br/>97.945<br/>99.289<br/>99.289<br/>99.155<br/>97.706<br/>99.256<br/>99.256<br/>99.156<br/>99.156<br/>99.379<br/>99.379<br/>99.379<br/>99.577<br/>100<br/>99.579<br/>100<br/>99.842<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>100<br/>100<br/>99.849<br/>100<br/>100<br/>100<br/>100<br/>99.849<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>10</th> |
100<br>99.385<br>99.623<br>99.624<br>99.624<br>99.620<br>99.620<br>99.620<br>99.620<br>99.620<br>99.620<br>99.620<br>99.620<br>99.319<br>99.319<br>99.319<br>99.319<br>99.319<br>99.319<br>99.319<br>99.319<br>99.320<br>99.320<br>99.320<br>99.320<br>99.320<br>99.320<br>99.320<br>99.320<br>99.320<br>99.320<br>99.320<br>99.320<br>99.320<br>99.320<br>99.320<br>99.320<br>99.320<br>99.320<br>99.320<br>99.320<br>99.320<br>99.320<br>99.320<br>99.320<br>99.320<br>99.320<br>99.320<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>99.520<br>90.500<br>90.500<br>90.500<br>90.500<br>90.500<br>90.500<br>90.500<br>90.5000<br>90.5   
   | Swelf2-107<br>Swelf2-107<br>Swelf2-108<br>Swelf2-108<br>Swelf2-110<br>Swelf2-110<br>Swelf2-110<br>Swelf2-112<br>Swelf2-113<br>Swelf2-113<br>Swelf2-114<br>Swelf2-117<br>Swelf2-117<br>Swelf2-117<br>Swelf2-117<br>Swelf2-117<br>Swelf2-122<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123<br>Swelf2-123  | 102147<br>102318<br>104296<br>106869<br>107490<br>108472<br>108955<br>101448<br>11881<br>11881<br>112594<br>113282<br>115680<br>117620<br>118068<br>117620<br>118068<br>117620<br>118068<br>119024<br>119024<br>119024<br>119024<br>119024<br>119024<br>119024<br>119024<br>119024<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>12035<br>1200 |
103203<br>104295<br>106683<br>107489<br>108434<br>108912<br>111489<br>111489<br>111489<br>111489<br>111489<br>111559<br>115599<br>115599<br>115599<br>115599<br>115599<br>115599<br>115599<br>115599<br>115599<br>115599<br>12204<br>12304<br>12304<br>12304<br>122045<br>126265<br>126255<br>126255<br>126255<br>126255<br>126255<br>126255<br>126255<br>126255<br>126255<br>126255<br>126255<br>126255<br>129676<br>139675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675<br>129675   | 278<br>278<br>2382<br>441<br>2535<br>441<br>2535<br>441<br>2535<br>441<br>2535<br>441<br>714<br>714<br>456<br>915<br>642<br>747<br>1896<br>864<br>453<br>565<br>915<br>915<br>945<br>915<br>945<br>915<br>915<br>915<br>945<br>915<br>915<br>915<br>915<br>915<br>915<br>915<br>91   |  | 99.385<br>99.623<br>98.544<br>99.682<br>97.945<br>99.289<br>99.289<br>99.155<br>97.706<br>99.256<br>99.256<br>99.156<br>99.156<br>99.379<br>99.379<br>99.379<br>99.577<br>100<br>99.579<br>100<br>99.842<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>100<br>100<br>99.849<br>100<br>100<br>100<br>100<br>99.849<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>10   
   |
| INT Repart Institution of the second secon  | H3L           H4L           H4R           H5R           H6R           D1R           D2L           D3R           D4R           D5R           D4R           D5R           D6R           D7R           D6R           D7R           D10R           D11L           D12L           .           D13L           A1L           A2L           A3R           A6L           A7L           A8R           A10L           A10L                        | CPAVII2<br>CPAVII2<br>CPAVII3<br>CPAVII3<br>CPAVII3<br>CPAVII6<br>CPAVII6<br>CPAVI16<br>CPAVI16<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI20<br>CPAVI2  | NoF-100         1037-10           NoF-100         103723           NoF-100         103723           NoF-100         103723           NoF-110         103723           NoF-1110         107274           NoF-1111         107574           NoF-1111         107574           NoF-1113         109361           NoF-114         11854           NoF-115         112371           NoF-115         112371           NoF-115         112371           NoF-114         113000           NoF-115         112371           NoF-114         113000           NoF-121         19430           NoF-121         19430           NoF-122         123051           NoF-122         123051           NoF-122         123015           NoF-122         123015           NoF-123         123015           NoF-124         12744           NoF-125         123015           NoF-124         12744           NoF-125         123015           NoF-124         123040           NoF-125         123015           NoF-126         13010      <  
   
   
   | 120         570           120         978           120         978           120         978           120         978           120         978           121         441           282         283           294         441           295         2535           294         441           200         714           656         657           201         146           5071         642           238         915           201         647           203         1656           677         864           293         1656           707         453           203         1656           707         453           203         1656           707         882           204         1935           577         882           109         495           224         119           300         867           640         348           302         233           303         867           640  
   
   | (c)           (c) | 38.342           99.335           99.337           99.337           99.337           99.337           99.337           99.337           99.337           99.535           99.339           99.339           99.339           99.331           99.331           99.331           99.331           99.339           99.337           90.337           100           99.39           99.410           99.337           90.337           100           99.39           99.427           90.437           100           99.339           99.452           99.453           99.454           100           100           100           99.39           99.52           99.53           99.53           99.53           99.53           99.53           99.53           99.53           99.53           99.53  
  | Mar 210         (Mod2) (Mod2)           Mar 2110         (Mod2) (Mod2)           Mar 2110         (Mod2) (Mod2)           Mar 2111         (Mod2) (Mod2) (Mod2)           Mar 2112         (Mod2) (Mod2) (Mod2)           Mar 2113         (Mod2) (Mod2) (Mod2) (Mod2)           Mar 2114         (Mod2) (Mod2) (Mod2) (Mod2) (Mod2)           Mar 2115         (Mod2) (Mod  
   
  | $\begin{array}{c} 270 \\ 270 \\ 288 \\ (-) \\ 288 \\ (-) \\ 288 \\ (-) \\ 288 \\ (-) \\ 241 \\ (-) \\ 243 \\ (-) \\ 243 \\ (-) \\ 243 \\ (-) \\ 238 \\ (-) \\ 238 \\ (-) \\ 238 \\ (-) \\ 238 \\ (-) \\ 238 \\ (-) \\ 238 \\ (-) \\ 238 \\ (-) \\ 238 \\ (-) \\ 248 \\ (-) \\ (-) \\ 248 \\ (-) \\ (-) \\ 248 \\ (-) \\$  |
99,69<br>99,74<br>99,74<br>99,74<br>99,74<br>99,968<br>99,968<br>99,97<br>99,97<br>99,97<br>99,15<br>99,15<br>99,15<br>99,17<br>99,37<br>100<br>99,19<br>99,37<br>100<br>99,19<br>99,45<br>100<br>99,19<br>99,45<br>100<br>99,22<br>100<br>100<br>100<br>100<br>100<br>99,23<br>80,59<br>100<br>99,23<br>100<br>99,23<br>100<br>99,23<br>100<br>99,23<br>100<br>99,23<br>100<br>99,23<br>100<br>99,23<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>99,25<br>100<br>90,25<br>100<br>90,25<br>100<br>90,25<br>100<br>90,25<br>100<br>90,25<br>100<br>90,25<br>100<br>90,25<br>100<br>90,25<br>100<br>90,25<br>100<br>90,25<br>100<br>90,25<br>100<br>90,25<br>100<br>90,25<br>100<br>90,25<br>100<br>90,25<br>100<br>90,25<br>100<br>90,25<br>100<br>90,25<br>100<br>90,25<br>100<br>90,25<br>100<br>90,25<br>100<br>90,25<br>100<br>90,25<br>1000          | Nath         Nath           Nath <th>004158 (0013076)<br/>(0013076)<br/>(0013076)<br/>(0013076)<br/>(001307776)<br/>(001307777777777777777777777777777777777</th> <th>5         978           3         238           3         238           3         238           7         945           5         441           3         2353           4         677           945         2411           8         714           4         677           9         464           971         914           4         673           9         642           2         747           9         642           2         747           1         1656           6         675           2         234           1         1955           8         867           2         234           9         915           9         807           2         233           8         867           2         2435           8         867           3         2</th> <th>(c)<br/>(c)<br/>(c)<br/>(c)<br/>(c)<br/>(c)<br/>(c)<br/>(c)<br/>(c)<br/>(c)</th> <th>99,692<br/>99,748<br/>99,748<br/>99,682<br/>99,468<br/>99,468<br/>99,468<br/>99,468<br/>99,468<br/>99,468<br/>99,468<br/>99,468<br/>99,468<br/>99,468<br/>99,468<br/>99,462<br/>99,462<br/>99,462<br/>99,462<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99,264<br/>99</th> <th>Beam Point         Biological Point           Beam Point         Print           Weilt-100         Biological Point           Weilt-120         Biolo</th> <th>(i)           (i)           (i)           (ii)           (iii)           (iiiiiii)           (iiiiiiii)</th> <th>100         99385         99438         99438         99438         99438         99438         99438         99438         99438         99438         99438         99438         99438         99438         99439         99315         99239         99315         99239         99315         99236         100         99379         99236         99303         99431         100         99597         100         99587         3054667         100         995819         99542         2559         99462         5559         90462         95259         99462         99718         995473         89567         395567         995482         99718         995462         99718         99542         99548         99548         99718         995482         995482         99718         995482         99718         995482         99718         995482         99718         995482         99718         995482         99718         995482         99718         995482         99718         995482         99718         995482         99718         995482         99718         995482         99718         995482         99718         995482         99718         995482         99718         995482         99718         995482         995482<th>Swelf2-107           Swelf2-108           Swelf2-108           Swelf2-108           Swelf2-108           Swelf2-110           Swelf2-110           Swelf2-111           Swelf2-112           Swelf2-112           Swelf2-112           Swelf2-112           Swelf2-113           Swelf2-121           Swelf2-122           Swelf2-123           Swelf2-124           Swelf2-125           Swelf2-125           Swelf2-125           Swelf2-125           Swelf2-131          
Sw</th><th>102147<br/>103318<br/>104296<br/>106869<br/>107490<br/>108472<br/>108955<br/>101448<br/>10955<br/>111448<br/>112594<br/>113282<br/>115680<br/>118068<br/>119024<br/>113282<br/>115680<br/>119024<br/>119622<br/>11962<br/>11962<br/>120499<br/>122338<br/>123232<br/>124911<br/>125384<br/>120499<br/>122338<br/>12690<br/>129176<br/>12960<br/>129176<br/>130809<br/>133854<br/>134202<br/>132995<br/>133854</th><th>102301<br/>104295<br/>104295<br/>104295<br/>104391<br/>10834<br/>10834<br/>11888<br/>112540<br/>11489<br/>11489<br/>11489<br/>115539<br/>115639<br/>115639<br/>115639<br/>115639<br/>115639<br/>115639<br/>115639<br/>115955<br/>122401<br/>122504<br/>122504<br/>122504<br/>122504<br/>122504<br/>122504<br/>122505<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>120555<br/>120555<br/>120555<br/>120555<br/>120555<br/>120555<br/>120555<br/>120555<br/>1205555<br/>1205555<br/>1205555<br/>120555555<br/>1205555<br/>12055555555<br/>1205555555</th><th>278<br/>278<br/>278<br/>2288<br/>621<br/>945<br/>945<br/>945<br/>945<br/>945<br/>945<br/>945<br/>945</th><th></th><th>99.385<br/>99.385<br/>99.623<br/>98.544<br/>99.682<br/>99.395<br/>99.359<br/>99.359<br/>99.359<br/>99.359<br/>99.359<br/>99.379<br/>99.379<br/>99.379<br/>99.379<br/>99.379<br/>99.379<br/>99.379<br/>99.379<br/>99.379<br/>99.379<br/>99.379<br/>99.379<br/>99.379<br/>99.3819<br/>99.5819<br/>99.5819<br/>99.653<br/>99.653<br/>99.653</th></th>   
   | 004158 (0013076)<br>(0013076)<br>(0013076)<br>(0013076)<br>(001307776)<br>(001307777777777777777777777777777777777  | 5         978           3         238           3         238           3         238           7         945           5         441           3         2353           4         677           945         2411           8         714           4         677           9         464           971         914           4         673           9         642           2         747           9         642           2         747           1         1656           6         675           2         234           1         1955           8         867           2         234           9         915           9         807           2         233           8         867           2         2435           8         867           3         2   | (c)<br>(c)<br>(c)<br>(c)<br>(c)<br>(c)<br>(c)<br>(c)<br>(c)<br>(c)  | 99,692<br>99,748<br>99,748<br>99,682<br>99,468<br>99,468<br>99,468<br>99,468<br>99,468<br>99,468<br>99,468<br>99,468<br>99,468<br>99,468<br>99,468<br>99,462<br>99,462<br>99,462<br>99,462<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99,264<br>99  | Beam Point         Biological Point           Beam Point         Print           Weilt-100         Biological Point           Weilt-120         Biolo  
   | (i)           (i)           (i)           (ii)           (iii)           (iiiiiii)           (iiiiiiii)   
   
  | 100         99385         99438         99438         99438         99438         99438         99438         99438         99438         99438         99438         99438         99438         99438         99439         99315         99239         99315         99239         99315         99236         100         99379         99236         99303         99431         100         99597         100         99587         3054667         100         995819         99542         2559         99462         5559         90462         95259         99462         99718         995473         89567         395567         995482         99718         995462         99718         99542         99548         99548         99718         995482         995482         99718         995482         99718         995482         99718         995482         99718         995482         99718         995482         99718         995482         99718         995482         99718         995482         99718         995482         99718         995482         99718         995482         99718         995482         99718         995482         99718         995482         99718         995482         99718         995482         995482 <th>Swelf2-107           Swelf2-108           Swelf2-108           Swelf2-108           Swelf2-108           Swelf2-110           Swelf2-110           Swelf2-111           Swelf2-112           Swelf2-112           Swelf2-112           Swelf2-112           Swelf2-113           Swelf2-121           Swelf2-122           Swelf2-123           Swelf2-124           Swelf2-125           Swelf2-125           Swelf2-125           Swelf2-125           Swelf2-131           Sw</th> <th>102147<br/>103318<br/>104296<br/>106869<br/>107490<br/>108472<br/>108955<br/>101448<br/>10955<br/>111448<br/>112594<br/>113282<br/>115680<br/>118068<br/>119024<br/>113282<br/>115680<br/>119024<br/>119622<br/>11962<br/>11962<br/>120499<br/>122338<br/>123232<br/>124911<br/>125384<br/>120499<br/>122338<br/>12690<br/>129176<br/>12960<br/>129176<br/>130809<br/>133854<br/>134202<br/>132995<br/>133854</th> <th>102301<br/>104295<br/>104295<br/>104295<br/>104391<br/>10834<br/>10834<br/>11888<br/>112540<br/>11489<br/>11489<br/>11489<br/>115539<br/>115639<br/>115639<br/>115639<br/>115639<br/>115639<br/>115639<br/>115639<br/>115955<br/>122401<br/>122504<br/>122504<br/>122504<br/>122504<br/>122504<br/>122504<br/>122505<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>122655<br/>120555<br/>120555<br/>120555<br/>120555<br/>120555<br/>120555<br/>120555<br/>120555<br/>1205555<br/>1205555<br/>1205555<br/>120555555<br/>1205555<br/>12055555555<br/>1205555555</th> <th>278<br/>278<br/>278<br/>2288<br/>621<br/>945<br/>945<br/>945<br/>945<br/>945<br/>945<br/>945<br/>945</th> <th></th> <th>99.385<br/>99.385<br/>99.623<br/>98.544<br/>99.682<br/>99.395<br/>99.359<br/>99.359<br/>99.359<br/>99.359<br/>99.359<br/>99.379<br/>99.379<br/>99.379<br/>99.379<br/>99.379<br/>99.379<br/>99.379<br/>99.379<br/>99.379<br/>99.379<br/>99.379<br/>99.379<br/>99.379<br/>99.3819<br/>99.5819<br/>99.5819<br/>99.653<br/>99.653<br/>99.653</th>   
  | Swelf2-107           Swelf2-108           Swelf2-108           Swelf2-108           Swelf2-108           Swelf2-110           Swelf2-110           Swelf2-111           Swelf2-112           Swelf2-112           Swelf2-112           Swelf2-112           Swelf2-113           Swelf2-121           Swelf2-122           Swelf2-123           Swelf2-124           Swelf2-125           Swelf2-125           Swelf2-125           Swelf2-125           Swelf2-131           Sw   | 102147<br>103318<br>104296<br>106869<br>107490<br>108472<br>108955<br>101448<br>10955<br>111448<br>112594<br>113282<br>115680<br>118068<br>119024<br>113282<br>115680<br>119024<br>119622<br>11962<br>11962<br>120499<br>122338<br>123232<br>124911<br>125384<br>120499<br>122338<br>12690<br>129176<br>12960<br>129176<br>130809<br>133854<br>134202<br>132995<br>133854  |
102301<br>104295<br>104295<br>104295<br>104391<br>10834<br>10834<br>11888<br>112540<br>11489<br>11489<br>11489<br>115539<br>115639<br>115639<br>115639<br>115639<br>115639<br>115639<br>115639<br>115955<br>122401<br>122504<br>122504<br>122504<br>122504<br>122504<br>122504<br>122505<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>122655<br>120555<br>120555<br>120555<br>120555<br>120555<br>120555<br>120555<br>120555<br>1205555<br>1205555<br>1205555<br>120555555<br>1205555<br>12055555555<br>1205555555   | 278<br>278<br>278<br>2288<br>621<br>945<br>945<br>945<br>945<br>945<br>945<br>945<br>945   |  | 99.385<br>99.385<br>99.623<br>98.544<br>99.682<br>99.395<br>99.359<br>99.359<br>99.359<br>99.359<br>99.359<br>99.379<br>99.379<br>99.379<br>99.379<br>99.379<br>99.379<br>99.379<br>99.379<br>99.379<br>99.379<br>99.379<br>99.379<br>99.379<br>99.3819<br>99.5819<br>99.5819<br>99.653<br>99.653<br>99.653   
   |
| IMV legath hindling surface prote in (Cop-HSL) EAUPA (RX) pal assoc protein (Cop-HSL) EAUPA (RX) pal assoc protein (Cop-HSL) UTF-4 (Late transcription factor 4.7 (Cop-HSR) (Cry-8-116 Viral membrane assembly proteins (VMAP) (Cop-HTR) Wirds neur (Cop-DSR) Viral neur large submit (Cop-DIR) Viran ores (Cop-DSR) Urine ores ores mall submit (Cop-DIR) Urine ores (Cop-DSR) Urine ores ores mall submit (Cop-DIR) Urine ores (Cop-DSR) Urine ores ores mall submit (Cop-DIR) Urine ores (Cop-DSR) Urine ores ores mall submit (Cop-DIR) Urine ore (Cop-DSR) Urine ores ores mall submit (Cop-DIR) Urine ore (Cop-DSR) Urine ores ores mall submit (Cop-DIR) Urine ore (Cop-DSR) Urine ores ores mall submit (Cop-DIR) Urine ore ore ore small submit (Cop-DIR) Urine ore ore ore ore origin factor 2:(Cop-DIR) Urine ore ore or order information resolution (Cop-DIR) Urine orea (Cop-DIR) Urine order order information (Cop-DIR) Urine order order information (Cop-DIR) Urine order order information resolution (Cop-DIR) Urine order order order information resolution (Cop-DIR) Urine order order information resolution (Cop-DIR) Urine order order order order information resolution (Cop-AIR) Urine order order order information resolution (Cop-AIR) Urine order order order information (Cop-AIR) Urine order order order in   | HUL<br>HHL<br>HHR<br>HER<br>DIR<br>DIR<br>DIR<br>DIR<br>DIR<br>DIR<br>DIR<br>DIR<br>DIR<br>DI   | CIX112<br>CIX112<br>CIX113<br>CIX1113<br>CIX1114<br>CIX1114<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX1117<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>CIX1121<br>C   | NoF-10         1037-10           NoF-100         10372-10           NoF-100         10372-10           NoF-100         10372-10           NoF-110         1072-14           NoF-1111         10785-10           NoF-111         11785-10           NoF-111         11785-10           NoF-111         11785-10           NoF-111         11785-10           NoF-111         11785-10           NoF-111         11785-10           NoF-122         11874-11  
   
   
  | 120         570           120         978           120         978           100         978           1088         2388           1088         2388           117         441           839         945           2317         441           656         657           000         714           656         657           000         714           838         915           999         1914           486         638           915         848           917         864           607         864           607         864           607         864           613         845           769         453           464         675           930         133           300         867           300         867           322         2662           2244         119           453         348           322         2687   
   
  | (c)           (c) | 38.342           99.335           99.337           99.337           99.337           99.337           99.337           99.337           99.337           99.337           99.337           99.337           99.337           99.337           99.337           99.337           99.337           99.337           99.339           99.341    
      90.379           99.342           99.342           99.342           99.342           99.342           99.342           99.342           99.342           99.343           99.342           99.343           99.343           99.342           99.343           99.343           99.343           99.343           99.343           99.343           99.343           99.343           99.343           99.344           99.343           99.344           99.344           99  | Margania         Margania         Margania           Margania         Margania         Margania <tr< th=""><th><math display="block">\begin{array}{cccc} 278 &amp; (\cdot) \\ 2788 &amp; (\cdot) \\ 2888 &amp; (\cdot) \\ 624 &amp; (\cdot) \\ 945 &amp; (\cdot) \\ 945 &amp; (\cdot) \\ 945 &amp; (\cdot) \\ 441 &amp; (\cdot) \\ 2358 &amp; (\cdot) \\ 441 &amp; (\cdot) \\ 2358 &amp; (\cdot) \\ 1914 &amp; (\cdot) \\ 457 &amp; (\cdot) \\ 1914 &amp; (\cdot) \\ 486 &amp; (\cdot) \\ 1914 &amp; (\cdot) \\ 486 &amp; (\cdot) \\ 1914 &amp; (\cdot) \\ 1915 &amp; (\cdot) \\ 1914 &amp; (\cdot) \\ 1915 </math></th><th>99.69<br/>99.74<br/>99.74<br/>99.74<br/>99.61<br/>99.61<br/>99.65<br/>99.68<br/>99.57<br/>99.57<br/>99.57<br/>99.57<br/>99.57<br/>100<br/>99.57<br/>100<br/>99.57<br/>100<br/>99.57<br/>100<br/>99.57<br/>100<br/>99.54<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>10</th><th>Nath1-107           Nath1-108           Nath1-108           Nath1-108           Nath1-108           Nath1-108           Nath1-107           Nath1-108           Nath1-108           Nath1-101           Nath1-111           Nath1-111           Nath1-111           Nath1-111           Nath1-111           Nath1-112           Nath1-112           Nath1-121           Nath1-122           Nath1-123           Nath1-123           Nath1-124           Nath1-125           Nath1-125           Nath1-125           Nath1-125           Nath1-125           Nath1-126           Nath1-127           Nath1-128           Nath1-128           Nath1-138           Nath1-138           Nath1-138           Nath1-131           <td< th=""><th>04158 00312079 0035 0035 0035 0035 0035 0035 0035 003</th><th>s         978           3         258           3         258           441         255           441         255           441         255           441         255           441         253           5         441           2         441           3         258           6         915           64         747           4         1936           6         915           64         741           1         1656           2         747           441         1935           5         864           1         1935           5         842           2         734           2         1193           3         363           3         363           2         2682           2         2034           2         1193           3         363           3         365           5         2682           2         2052</th><th>()         ()           ()         ()</th><th>99,692<br/>99,748<br/>99,748<br/>99,682<br/>99,682<br/>99,682<br/>99,682<br/>99,682<br/>99,682<br/>99,682<br/>99,515<br/>99,156<br/>98,595<br/>98,155<br/>99,154<br/>99,575<br/>100<br/>99,247<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100</th><th>weilt-10         0332         0429         978           weilt-10         0332         0442         978           weilt-110         0332         0421         0437         288           weilt-110         0473         0437         288         978           weilt-110         0470         0437         288         945           weilt-110         0470         0437         288         945           weilt-110         0470         0458         945         945           weilt-110         0470         1432         2355         945           weilt-111&lt;11881         11222         714         944         945         945           weilt-111&lt;11881         11223         1138         6177         288         946         946         947         948</th><th>(i)           (i)           (i)           (i)           (i)           (i)           (i)           (i)           (i)           (ii)           (iii)           (i)           (i) 
&lt;</th><th>100<br/>99.385<br/>99.282<br/>99.282<br/>99.282<br/>99.282<br/>99.282<br/>99.282<br/>99.282<br/>99.282<br/>99.282<br/>99.282<br/>99.282<br/>99.282<br/>99.282<br/>99.282<br/>99.282<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.20</th><th>Swell-10<br/>Swell-10<br/>Swell-10<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swe</th><th>102147<br/>103318<br/>104296<br/>106869<br/>107490<br/>108472<br/>108955<br/>111448<br/>112594<br/>113282<br/>111448<br/>112594<br/>113282<br/>111448<br/>113580<br/>117620<br/>118068<br/>119662<br/>120409<br/>122338<br/>124911<br/>125340<br/>125491<br/>125302<br/>126305<br/>126300<br/>129176<br/>130809<br/>132995<br/>133854<br/>133854<br/>134202<br/>136889</th><th>102305<br/>104295<br/>106683<br/>107489<br/>108434<br/>108912<br/>114895<br/>114895<br/>114895<br/>114895<br/>114895<br/>115595<br/>115595<br/>115595<br/>118962<br/>125045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>1200</th><th>238<br/>2382<br/>2382<br/>2382<br/>241<br/>2533<br/>441<br/>2533<br/>441<br/>2533<br/>441<br/>2533<br/>441<br/>2535<br/>1914<br/>1914<br/>457<br/>2358<br/>1914<br/>457<br/>2358<br/>19
14<br/>456<br/>457<br/>2358<br/>1914<br/>456<br/>457<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>231<br/>2358<br/>231<br/>2358<br/>231<br/>2358<br/>231<br/>2358<br/>231<br/>2358<br/>231<br/>2358<br/>231<br/>2358<br/>231<br/>2358<br/>231<br/>2358<br/>231<br/>2358<br/>231<br/>2358<br/>231<br/>2358<br/>231<br/>2358<br/>231<br/>2358<br/>231<br/>2358<br/>231<br/>2358<br/>231<br/>2358<br/>231<br/>2358<br/>231<br/>2358<br/>231<br/>2318<br/>2318<br/>2318<br/>2358<br/>231<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>231</th><th></th><th>99.385<br/>99.623<br/>98.544<br/>99.624<br/>97.945<br/>99.289<br/>99.289<br/>99.155<br/>97.706<br/>99.289<br/>99.155<br/>99.155<br/>99.156<br/>99.156<br/>99.317<br/>100<br/>99.379<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>10</th></td<></th></tr<> | $\begin{array}{cccc} 278 & (\cdot) \\ 2788 & (\cdot) \\ 2888 & (\cdot) \\ 624 & (\cdot) \\ 945 & (\cdot) \\ 945 & (\cdot) \\ 945 & (\cdot) \\ 441 & (\cdot) \\ 2358 & (\cdot) \\ 441 & (\cdot) \\ 2358 & (\cdot) \\ 1914 & (\cdot) \\ 457 & (\cdot) \\ 1914 & (\cdot) \\ 486 & (\cdot) \\ 1914 & (\cdot) \\ 486 & (\cdot) \\ 1914 & (\cdot) \\ 1915 & (\cdot) \\ 1914 & (\cdot) \\ 1915 $ | 99.69<br>99.74<br>99.74<br>99.74<br>99.61<br>99.61<br>99.65<br>99.68<br>99.57<br>99.57<br>99.57<br>99.57<br>99.57<br>100<br>99.57<br>100<br>99.57<br>100<br>99.57<br>100<br>99.57<br>100<br>99.54<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>10   | Nath1-107           Nath1-108           Nath1-108           Nath1-108           Nath1-108           Nath1-108           Nath1-107           Nath1-108           Nath1-108           Nath1-101           Nath1-111           Nath1-111           Nath1-111           Nath1-111           Nath1-111           Nath1-112           Nath1-112           Nath1-121           Nath1-122           Nath1-123           Nath1-123           Nath1-124           Nath1-125           Nath1-125           Nath1-125           Nath1-125           Nath1-125           Nath1-126           Nath1-127           Nath1-128           Nath1-128           Nath1-138           Nath1-138           Nath1-138           Nath1-131           Nath1-131           Nath1-131           Nath1-131           Nath1-131           Nath1-131           Nath1-131           Nath1-131     
     Nath1-131           Nath1-131 <td< th=""><th>04158 00312079 0035 0035 0035 0035 0035 0035 0035 003</th><th>s         978           3         258           3         258           441         255           441         255           441         255           441         255           441         253           5         441           2         441           3         258           6         915           64         747           4         1936           6         915           64         741           1         1656           2         747           441         1935           5         864           1         1935           5         842           2         734           2         1193           3         363           3         363           2         2682           2         2034           2         1193           3         363           3         365           5         2682           2         2052</th><th>()         ()           ()         ()</th><th>99,692<br/>99,748<br/>99,748<br/>99,682<br/>99,682<br/>99,682<br/>99,682<br/>99,682<br/>99,682<br/>99,682<br/>99,515<br/>99,156<br/>98,595<br/>98,155<br/>99,154<br/>99,575<br/>100<br/>99,247<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100</th><th>weilt-10         0332         0429         978           weilt-10         0332         0442         978           weilt-110         0332         0421         0437         288           weilt-110         0473         0437         288         978           weilt-110         0470         0437         288         945           weilt-110         0470         0437         288         945           weilt-110         0470         0458         945         945           weilt-110         0470         1432         2355         945           weilt-111&lt;11881         11222         714         944         945         945           weilt-111&lt;11881         11223         1138         6177         288         946         946         947         948</th><th>(i)           (i)           (i)           (i)           (i)           (i)           (i)           (i)           (i)           (ii)           (iii)           (i)           (i) 
&lt;</th><th>100<br/>99.385<br/>99.282<br/>99.282<br/>99.282<br/>99.282<br/>99.282<br/>99.282<br/>99.282<br/>99.282<br/>99.282<br/>99.282<br/>99.282<br/>99.282<br/>99.282<br/>99.282<br/>99.282<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.293<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.203<br/>99.20</th><th>Swell-10<br/>Swell-10<br/>Swell-10<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swell-11<br/>Swe</th><th>102147<br/>103318<br/>104296<br/>106869<br/>107490<br/>108472<br/>108955<br/>111448<br/>112594<br/>113282<br/>111448<br/>112594<br/>113282<br/>111448<br/>113580<br/>117620<br/>118068<br/>119662<br/>120409<br/>122338<br/>124911<br/>125340<br/>125491<br/>125302<br/>126305<br/>126300<br/>129176<br/>130809<br/>132995<br/>133854<br/>133854<br/>134202<br/>136889</th><th>102305<br/>104295<br/>106683<br/>107489<br/>108434<br/>108912<br/>114895<br/>114895<br/>114895<br/>114895<br/>114895<br/>115595<br/>115595<br/>115595<br/>118962<br/>125045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>1200</th><th>238<br/>2382<br/>2382<br/>2382<br/>241<br/>2533<br/>441<br/>2533<br/>441<br/>2533<br/>441<br/>2533<br/>441<br/>2535<br/>1914<br/>1914<br/>457<br/>2358<br/>1914<br/>457<br/>2358<br/>19
14<br/>456<br/>457<br/>2358<br/>1914<br/>456<br/>457<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>2358<br/>231<br/>2358<br/>231<br/>2358<br/>231<br/>2358<br/>231<br/>2358<br/>231<br/>2358<br/>231<br/>2358<br/>231<br/>2358<br/>231<br/>2358<br/>231<br/>2358<br/>231<br/>2358<br/>231<br/>2358<br/>231<br/>2358<br/>231<br/>2358<br/>231<br/>2358<br/>231<br/>2358<br/>231<br/>2358<br/>231<br/>2358<br/>231<br/>2358<br/>231<br/>2358<br/>231<br/>2318<br/>2318<br/>2318<br/>2358<br/>231<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>2318<br/>231</th><th></th><th>99.385<br/>99.623<br/>98.544<br/>99.624<br/>97.945<br/>99.289<br/>99.289<br/>99.155<br/>97.706<br/>99.289<br/>99.155<br/>99.155<br/>99.156<br/>99.156<br/>99.317<br/>100<br/>99.379<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>10</th></td<>  | 04158 00312079 0035 0035 0035 0035 0035 0035 0035 003   | s         978           3         258           3         258           441         255           441         255           441         255           441         255           441         253           5         441           2         441           3         258           6         915           64         747           4         1936           6         915           64         741           1         1656           2         747           441         1935           5         864           1         1935          
5         842           2         734           2         1193           3         363           3         363           2         2682           2         2034           2         1193           3         363           3         365           5         2682           2         2052                              | ()         ()             | 99,692<br>99,748<br>99,748<br>99,682<br>99,682<br>99,682<br>99,682<br>99,682<br>99,682<br>99,682<br>99,515<br>99,156<br>98,595<br>98,155<br>99,154<br>99,575<br>100<br>99,247<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100   | weilt-10         0332         0429         978           weilt-10         0332         0442         978           weilt-110         0332         0421         0437         288           weilt-110         0473         0437         288         978           weilt-110         0470         0437         288         945           weilt-110         0470         0437         288         945           weilt-110         0470         0458         945         945           weilt-110         0470         1432         2355         945           weilt-111<11881         11222         714         944         945         945           weilt-111<11881         11223         1138         6177         288         946         946         947         948   
  | (i)           (i)           (i)           (i)           (i)           (i)           (i)           (i)           (i)           (ii)           (iii)           (i)           (i)  <  
   | 100<br>99.385<br>99.282<br>99.282<br>99.282<br>99.282<br>99.282<br>99.282<br>99.282<br>99.282<br>99.282<br>99.282<br>99.282<br>99.282<br>99.282<br>99.282<br>99.282<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.293<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.203<br>99.20  
  |
Swell-10<br>Swell-10<br>Swell-10<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swell-11<br>Swe | 102147<br>103318<br>104296<br>106869<br>107490<br>108472<br>108955<br>111448<br>112594<br>113282<br>111448<br>112594<br>113282<br>111448<br>113580<br>117620<br>118068<br>119662<br>120409<br>122338<br>124911<br>125340<br>125491<br>125302<br>126305<br>126300<br>129176<br>130809<br>132995<br>133854<br>133854<br>134202<br>136889   | 102305<br>104295<br>106683<br>107489<br>108434<br>108912<br>114895<br>114895<br>114895<br>114895<br>114895<br>115595<br>115595<br>115595<br>118962<br>125045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>1200  |
238<br>2382<br>2382<br>2382<br>241<br>2533<br>441<br>2533<br>441<br>2533<br>441<br>2533<br>441<br>2535<br>1914<br>1914<br>457<br>2358<br>1914<br>457<br>2358<br>1914<br>456<br>457<br>2358<br>1914<br>456<br>457<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>2358<br>231<br>2358<br>231<br>2358<br>231<br>2358<br>231<br>2358<br>231<br>2358<br>231<br>2358<br>231<br>2358<br>231<br>2358<br>231<br>2358<br>231<br>2358<br>231<br>2358<br>231<br>2358<br>231<br>2358<br>231<br>2358<br>231<br>2358<br>231<br>2358<br>231<br>2358<br>231<br>2358<br>231<br>2358<br>231<br>2318<br>2318<br>2318<br>2358<br>231<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>2318<br>231 |  | 99.385<br>99.623<br>98.544<br>99.624<br>97.945<br>99.289<br>99.289<br>99.155<br>97.706<br>99.289<br>99.155<br>99.155<br>99.156<br>99.156<br>99.317<br>100<br>99.379<br>99.842<br>100<br>99.842<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>10   |
| INT Repart Institution (Cop-HSL)           RAP4 RNA pal assoc protein (Cop-HSL)           RAP4 RNA pal assoc protein (Cop-HSL)           RAP4 RNA pal assoc protein (Cop-HSR)           (CYV-8-116           BNA toppics neuron stype 1 (Cop-HSR)           (CYV-8-116           BNA toppics neuron stype 1 (Cop-HSR)           (CYV-8-116           BNA toppics neuron stype 1 (Cop-HSR)           (CYV-8-116           BNA toppics neuron starge submit (Cop-DIR)           Virian core (Cop-DSR)           Virian core (Cop-DSR)           Mind neuron starge submit (Cop-DIR)           Virian core (Cop-DSR)           Marphagencies, VETS (carb transcription fact or small) (Cop-D6R)           RNA acpring core (Cop-DSR)           Marphagencies, VETS (carb transcription fact or small) (Cop-D6R)           RNA decapping corpus (Cop-DFR)           aRNA decapping corpus (Cop-DFR)           MThese, NHI (Cop-DIL)           aRNA decapping corpus (Cop-DIR)           VITF-3 (alst transcription factor 2) (Cop-DIL)           VITF-3 (alst transcription factor 3) (Cop-AL)           S Nord formation galway rotein (Cop-AL)  | III]           III]           III]           IIR           IIR           DIR           AIL           ASR      APL       | CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL2<br>CPAVIL  | NoF-10         1037-10           NoF-100         103723           NoF-100         103723           NoF-100         103723           NoF-110         103723           NoF-1110         107244           NoF-1111         107574           NoF-1111         107585           NoF-1111         107587           NoF-1111         107597           NoF-1111         107597           NoF-1111         103001           NoF-1111         103001           NoF-1111         103001           NoF-121         103001           NoF-121         103001           NoF-122         103001           NoF-122         103011           NoF-122         103011           NoF-122         103011           NoF-122         103011           NoF-122         103011           NoF-122         103011 <th>120         570           120         978           120         978           120         970           120         978           120         978           120         978           121         441           895         2535           224         441           895         2535           224         441           666         657           999         1914           465         657           388         915           317         486           328         915           3170         1896           328         915           999         1914           461         642           233         1656           707         453           2464         1935           577         882           109         495           224         119           300         867           4643         1938           233         1093           300         867           4643         3483</th> <th>(c)           (c)           (c)</th> <th>38.942           99.385           99.385           99.385           99.385           99.862           99.9126           99.9126           99.9126           99.9126           99.9126           99.9126           99.9126           99.9126           99.9126           99.9127           99.9128           99.9194           99.627           99.628           99.9194           99.621           99.621           99.621           99.6224           99.621           99.621           99.621           99.621           99.9234           99.9234           99.93718           100           99.93718           100           92.708</th> <th>Mar 210         (Mod2) (Mod2)           Mar 2110         (Mod2) (Mod2)           Mar 2111         (Mod2) (Mod2)           Mar 2111         (Mod2) (Mod2)           Mar 2111         (Mod2) (Mod2)           Mar 2112         (Mod2) (Mod2) (Mod2)           Mar 2113         (Mod2) (Mod2) (Mod2) (Mod2)           Mar 2114         (Mod2) (Mod</th> <th><math display="block">\begin{array}{cccccccccccccccccccccccccccccccccccc</math></th> <th>99,69<br/>99,69<br/>99,74<br/>99,74<br/>99,74<br/>99,61<br/>99,94<br/>99,95<br/>99,95<br/>99,15<br/>99,15<br/>99,15<br/>99,15<br/>99,15<br/>99,15<br/>99,15<br/>99,15<br/>99,95<br/>99,95<br/>100<br/>99,19<br/>99,84<br/>99,05<br/>100<br/>99,19<br/>99,85<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>10</th> <th>Nath         Nath           Nath         Nath           Nath<th>004158 (05136) (072)<br/>(05156) (072)<br/>(07076) (05353) (072)<br/>(07076) (05353) (072)<br/>(070776) (05333) (072)<br/>(070776) (05333) (072)<br/>(070776) (0532) (072)<br/>(070776) (072)<br/>(07276) (07276)<br/>(07276) (07276)<br/>(07276</th><th>\$         978           \$         978           \$         238           \$         264           \$         441           \$         241           \$         241           \$         241           \$         241           \$         252           \$         7           \$         7           \$         747           \$         238           \$         9662           \$         7           \$         8864           \$         11656           \$         8564           \$         882           \$         882           \$         881           \$         882           \$         882           \$         883           \$         867           \$         2133           \$         863           \$         862           \$         2133           \$         867           \$         2133           \$         5676</th><th>()         ()           ()         ()           ()         ()           ()         ()           ()         ()           ()         ()           ()         ()           ()         ()           ()         ()           ()         ()           ()         ()           ()         ()           ()         ()           ()         ()           ()         ()           ()         ()           ()         ()           ()         ()           ()         ()           ()         ()          
()         ()           ()         ()</th><th>99,692<br/>99,748<br/>96,135<br/>99,6135<br/>99,6135<br/>99,6135<br/>99,6135<br/>99,6135<br/>99,6135<br/>99,9452<br/>98,355<br/>100<br/>99,9452<br/>99,652<br/>99,652<br/>99,652<br/>100<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,5520</th><th>bit         bit         bit         bit           bit         bit         bit         bit         bit           bit         bit         bit         bit         bit         bit           bit         bit         bit         bit         bit         bit         bit           bit</th><th>(i)         (i)           (i)         (i)           (ii)         (iii)           (iii)         (iii)</th><th>100           99385           99623           99623           99624           99554           99554           99554           99554           99235           99335           99335           99335           99335           99335           99335           99335           99335           99335           99335           99335           99335           99335           99335           99335           99313           99313           99313           99313           99313           99313           99313           99313           99313           99313           99313           99313           99313           99313           99313           99313           99313           99314           99315           99316           99317           99318           99318           99319<th>Section
2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-201</th><th>102147<br/>102318<br/>104296<br/>103318<br/>104296<br/>106869<br/>107490<br/>108472<br/>108955<br/>11448<br/>112594<br/>11488<br/>112594<br/>113880<br/>118068<br/>119024<br/>113680<br/>119662<br/>120409<br/>122338<br/>119662<br/>120409<br/>122338<br/>119662<br/>126300<br/>128290<br/>129176<br/>126300<br/>128290<br/>129176<br/>133884<br/>134202<br/>133895<br/>133884<br/>134202<br/>136898</th><th>102295<br/>106683<br/>107489<br/>108434<br/>108912<br/>111489<br/>111889<br/>112594<br/>112594<br/>112594<br/>112594<br/>112595<br/>115635<br/>120085<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12008<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>120</th><th>2018<br/>2018<br/>2018<br/>2018<br/>2018<br/>2018<br/>2018<br/>2018</th><th></th><th>99.385<br/>99.385<br/>99.623<br/>98.544<br/>99.682<br/>99.355<br/>99.355<br/>99.355<br/>99.355<br/>99.355<br/>99.355<br/>99.355<br/>99.315<br/>99.355<br/>99.315<br/>99.315<br/>99.315<br/>99.315<br/>99.319<br/>99.319<br/>99.319<br/>99.842<br/>100<br/>99.819<br/>99.842<br/>100<br/>99.819<br/>99.842<br/>100<br/>99.819<br/>99.842<br/>100</th></th></th>  
  | 120         570           120         978           120         978           120         970           120         978           120         978           120         978           121         441           895         2535           224         441           895         2535           224         441           666         657           999         1914           465         657           388         915           317         486           328         915           3170         1896           328         915           999         1914           461         642           233         1656           707         453           2464         1935           577         882           109         495           224         119           300         867           4643         1938           233         1093           300         867           4643         3483  
   
  | (c)                             | 38.942           99.385           99.385           99.385           99.385           99.862           99.9126           99.9126           99.9126           99.9126           99.9126           99.9126           99.9126           99.9126           99.9126           99.9127           99.9128           99.9194           99.627           99.628           99.9194           99.621           99.621           99.621           99.6224           99.621           99.621           99.621           99.621           99.9234           99.9234           99.93718        
  100           99.93718           100           92.708  | Mar 210         (Mod2) (Mod2)           Mar 2110         (Mod2) (Mod2)           Mar 2111         (Mod2) (Mod2)           Mar 2111         (Mod2) (Mod2)           Mar 2111         (Mod2) (Mod2)           Mar 2112         (Mod2) (Mod2) (Mod2)           Mar 2113         (Mod2) (Mod2) (Mod2) (Mod2)           Mar 2114         (Mod2) (Mod   
   
   | $\begin{array}{cccccccccccccccccccccccccccccccccccc$  | 99,69<br>99,69<br>99,74<br>99,74<br>99,74<br>99,61<br>99,94<br>99,95<br>99,95<br>99,15<br>99,15<br>99,15<br>99,15<br>99,15<br>99,15<br>99,15<br>99,15<br>99,95<br>99,95<br>100<br>99,19<br>99,84<br>99,05<br>100<br>99,19<br>99,85<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>10   
  | Nath         Nath           Nath <th>004158 (05136) (072)<br/>(05156) (072)<br/>(07076) (05353) (072)<br/>(07076) (05353) (072)<br/>(070776) (05333) (072)<br/>(070776) (05333) (072)<br/>(070776) (0532) (072)<br/>(070776) (072)<br/>(07276) (07276)<br/>(07276) (07276)<br/>(07276</th> <th>\$         978           \$         978           \$         238           \$         264           \$         441           \$         241           \$         241           \$         241           \$         241           \$         252           \$         7           \$         7           \$         747           \$         238           \$         9662           \$         7           \$         8864           \$         11656           \$         8564           \$         882           \$         882           \$         881           \$         882           \$         882           \$         883           \$         867           \$         2133           \$         863           \$         862           \$         2133           \$         867           \$         2133           \$         5676</th> <th>()         ()           ()         ()</th> <th>99,692<br/>99,748<br/>96,135<br/>99,6135<br/>99,6135<br/>99,6135<br/>99,6135<br/>99,6135<br/>99,6135<br/>99,9452<br/>98,355<br/>100<br/>99,9452<br/>99,652<br/>99,652<br/>99,652<br/>100<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,652<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,552<br/>99,5520</th> <th>bit         bit         bit         bit           bit         bit         bit         bit         bit           bit         bit         bit         bit         bit         bit           bit         bit         bit         bit         bit         bit         bit           bit</th> <th>(i)         (i)           (i)         (i)           (ii)         (iii)           (iii)         (iii)</th> <th>100           99385           99623           99623           99624           99554           99554           99554           99554           99235           99335           99335           99335           99335           99335           99335           99335           99335           99335           99335           99335           99335           99335           99335           99335           99313           99313           99313           99313           99313           99313           99313           99313           99313           99313           99313           99313           99313           99313           99313           99313           99313           99314           99315           99316           99317           99318           99318           99319<th>Section
2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-201</th><th>102147<br/>102318<br/>104296<br/>103318<br/>104296<br/>106869<br/>107490<br/>108472<br/>108955<br/>11448<br/>112594<br/>11488<br/>112594<br/>113880<br/>118068<br/>119024<br/>113680<br/>119662<br/>120409<br/>122338<br/>119662<br/>120409<br/>122338<br/>119662<br/>126300<br/>128290<br/>129176<br/>126300<br/>128290<br/>129176<br/>133884<br/>134202<br/>133895<br/>133884<br/>134202<br/>136898</th><th>102295<br/>106683<br/>107489<br/>108434<br/>108912<br/>111489<br/>111889<br/>112594<br/>112594<br/>112594<br/>112594<br/>112595<br/>115635<br/>120085<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12008<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>120</th><th>2018<br/>2018<br/>2018<br/>2018<br/>2018<br/>2018<br/>2018<br/>2018</th><th></th><th>99.385<br/>99.385<br/>99.623<br/>98.544<br/>99.682<br/>99.355<br/>99.355<br/>99.355<br/>99.355<br/>99.355<br/>99.355<br/>99.355<br/>99.315<br/>99.355<br/>99.315<br/>99.315<br/>99.315<br/>99.315<br/>99.319<br/>99.319<br/>99.319<br/>99.842<br/>100<br/>99.819<br/>99.842<br/>100<br/>99.819<br/>99.842<br/>100<br/>99.819<br/>99.842<br/>100</th></th>   
   | 004158 (05136) (072)<br>(05156) (072)<br>(07076) (05353) (072)<br>(07076) (05353) (072)<br>(070776) (05333) (072)<br>(070776) (05333) (072)<br>(070776) (0532) (072)<br>(070776) (072)<br>(07276) (07276)<br>(07276) (07276)<br>(07276  | \$         978           \$         978           \$         238           \$         264           \$         441           \$         241           \$         241           \$         241           \$         241           \$         252           \$         7           \$         7           \$         747           \$         238           \$         9662           \$         7           \$         8864           \$         11656           \$         8564           \$         882           \$         882           \$         881           \$         882           \$         882           \$         883           \$         867           \$         2133           \$         863           \$         862           \$         2133           \$         867           \$         2133           \$         5676                  | ()         ()             | 99,692<br>99,748<br>96,135<br>99,6135<br>99,6135<br>99,6135<br>99,6135<br>99,6135<br>99,6135<br>99,9452<br>98,355<br>100<br>99,9452<br>99,652<br>99,652<br>99,652<br>100<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,652<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,552<br>99,5520   | bit         bit         bit         bit           bit         bit         bit         bit         bit           bit         bit         bit         bit         bit         bit           bit         bit         bit         bit         bit         bit         bit           bit  
   | (i)         (i)           (i)         (i)           (ii)         (iii)           (iii)         (iii)  
  | 100           99385           99623           99623           99624           99554           99554           99554           99554           99235           99335           99335           99335           99335           99335           99335           99335           99335           99335           99335           99335           99335           99335           99335           99335           99313           99313           99313           99313           99313           99313           99313           99313           99313           99313           99313           99313           99313           99313           99313           99313           99313           99314           99315           99316           99317           99318           99318           99319 <th>Section
2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-2017<br/>Swell-201</th> <th>102147<br/>102318<br/>104296<br/>103318<br/>104296<br/>106869<br/>107490<br/>108472<br/>108955<br/>11448<br/>112594<br/>11488<br/>112594<br/>113880<br/>118068<br/>119024<br/>113680<br/>119662<br/>120409<br/>122338<br/>119662<br/>120409<br/>122338<br/>119662<br/>126300<br/>128290<br/>129176<br/>126300<br/>128290<br/>129176<br/>133884<br/>134202<br/>133895<br/>133884<br/>134202<br/>136898</th> <th>102295<br/>106683<br/>107489<br/>108434<br/>108912<br/>111489<br/>111889<br/>112594<br/>112594<br/>112594<br/>112594<br/>112595<br/>115635<br/>120085<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>122008<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12207<br/>12008<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12208<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>12008<br/>120</th> <th>2018<br/>2018<br/>2018<br/>2018<br/>2018<br/>2018<br/>2018<br/>2018</th> <th></th> <th>99.385<br/>99.385<br/>99.623<br/>98.544<br/>99.682<br/>99.355<br/>99.355<br/>99.355<br/>99.355<br/>99.355<br/>99.355<br/>99.355<br/>99.315<br/>99.355<br/>99.315<br/>99.315<br/>99.315<br/>99.315<br/>99.319<br/>99.319<br/>99.319<br/>99.842<br/>100<br/>99.819<br/>99.842<br/>100<br/>99.819<br/>99.842<br/>100<br/>99.819<br/>99.842<br/>100</th>   
   | Section 2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-2017<br>Swell-201   | 102147<br>102318<br>104296<br>103318<br>104296<br>106869<br>107490<br>108472<br>108955<br>11448<br>112594<br>11488<br>112594<br>113880<br>118068<br>119024<br>113680<br>119662<br>120409<br>122338<br>119662<br>120409<br>122338<br>119662<br>126300<br>128290<br>129176<br>126300<br>128290<br>129176<br>133884<br>134202<br>133895<br>133884<br>134202<br>136898   | 102295<br>106683<br>107489<br>108434<br>108912<br>111489<br>111889<br>112594<br>112594<br>112594<br>112594<br>112595<br>115635<br>120085<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>122008<br>12207<br>12207<br>12207<br>12207<br>12207<br>12207<br>12207<br>12207<br>12207<br>12207<br>12207<br>12207<br>12207<br>12207<br>12207<br>12207<br>12207<br>12207<br>12207<br>12207<br>12207<br>12207<br>12207<br>12207<br>12207<br>12207<br>12207<br>12207<br>12008<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12208<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>12008<br>120  | 2018<br>2018<br>2018<br>2018<br>2018<br>2018<br>2018<br>2018  
  |  | 99.385<br>99.385<br>99.623<br>98.544<br>99.682<br>99.355<br>99.355<br>99.355<br>99.355<br>99.355<br>99.355<br>99.355<br>99.315<br>99.355<br>99.315<br>99.315<br>99.315<br>99.315<br>99.319<br>99.319<br>99.319<br>99.842<br>100<br>99.819<br>99.842<br>100<br>99.819<br>99.842<br>100<br>99.819<br>99.842<br>100  |
| IMV legath billing under protein (Cop-H3L)<br>EAPPa (RX) pal assoc protein (Cop-H3L)<br>EAPPa (RX) pal assoc protein (Cop-H3L)<br>DNA toposionernex type 1 (Cop-H3R)<br>(Cop-H3L)<br>Viral enterthanes assembly proteins (VMAP) (Cop-H3R)<br>Wiran core (Cop-D3L)<br>Viran core (Cop-D3L)<br>Viran core (Cop-D3R)<br>TendeDNA glycosylase, DNA polymerase processi vity factor (Cop-D4R)<br>Mrahapenessis, VETT- (carly transcription fact or small) (Cop-D6R)<br>EXAs patient (Cop-D3R)<br>Carbonic anglyCop-Gamma (Cop-D5R)<br>Carbonic anglyCop-Gamma (Cop-D5R)<br>Carbonic anglyCop-Gamma (Cop-D5R)<br>EXAs patient cop-D5R)<br>EXAs patient (Cop-D5R)<br>EXAs patient (Cop-D5R)<br>EX   | IEIL           IHL           IHR           IHR           IHR           IFR           DIR           DIR    | CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVILE<br>CIAVIL  | NoF-108         1037-10           NoF-108         103723           NoF-108         103723           NoF-108         103723           NoF-108         103723           NoF-110         107724           NoF-111         107875           NoF-111         107875           NoF-111         107875           NoF-111         107874           NoF-111         107875           NoF-114         118540           NoF-121         118474           NoF-122         118474   
   
   
   | 120         570           120         978           120         978           120         978           120         978           120         978           120         978           121         441           666         657           000         714           665         657           000         714           666         657           000         714           643         838           915         99           111         486           588         915           677         841           7710         1896           677         842           643         234           643         234           103         867           77         882           2133         300           300         867           322         411           933         957           873         579           873         579           973         579  
   
   | (c)                             | 38.342           99.335           99.335           99.3372           99.3722           99.432           99.432           99.432           99.432           99.536           99.536           99.536           99.536           99.536           99.537           99.538           99.531           99.531           99.542  
  | Mar.210         (Mod.210         (Mod.210           Mar.210         (Mod.210         (Mod.210           Mar.210         (Mod.210         (Mod.210           Mar.210         (Mod.210         (Mod.210           Mar.2110         (Mod.210         (Mod.210           Mar.2111         (Mod.210         (Mod.210           Mar.2111         (Mod.210         (Mod.210           Mar.2111         (Mod.210         (Mod.210)           Mar.2112         (Mod.210)         (Mod.210)           Mar.2116         (Mod.210)         (Mod.210)           Mar.2110         (Mod.210)         (Mod.210)           Mar.2120         (Mod.210)         (Mod.210)   
   
   | $\begin{array}{cccc} 278 & (\cdot) \\ 2788 & (\cdot) \\ 2888 & (\cdot) \\ 624 & (\cdot) \\ 945 & (\cdot) \\ 945 & (\cdot) \\ 945 & (\cdot) \\ 945 & (\cdot) \\ 141 & (\cdot) \\ 2358 & (\cdot) \\ 1914 & (\cdot) \\ 2358 & (\cdot) \\ 1914 & (\cdot) \\ 1914 & (\cdot) \\ 486 & (\cdot) \\ 1915 & (\cdot) \\ 1914 & (\cdot) \\ 486 & (\cdot) \\ 1915 & (\cdot) \\ 1915 & (\cdot) \\ 1914 & (\cdot) \\ 1915 & (\cdot) \\ 1915$ | 99.69<br>99.69<br>99.14<br>99.14<br>99.14<br>99.05<br>99.05<br>99.55<br>99.55<br>99.57<br>100<br>99.57<br>100<br>99.57<br>100<br>99.57<br>100<br>99.57<br>100<br>99.57<br>100<br>99.57<br>100<br>99.55<br>100<br>99.55<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>1   | North-100           North-100           North-100           North-100           North-100           North-101           North-112           North-121           North-122           North-123           North-124           North-124           North-127           North-128           North-128           North-128           North-131           North-132 <td< th=""><th>04458 0032037 (1990)
(1990) (1</th><th>s         978           2288         624           2389         624           7         945           241         7           945         241           2         241           8         71           94         233           2         241           8         714           1         255           642         747           2         747           1         1656           642         7453           2         7453           2         141           1         1655           882         1419           2         143           2         143           3         363           3         364           9         2119           3         365           976         2087           2         576           9         21</th><th>(c)         (d)           (d)         (d)</th><th>99,692<br/>99,748<br/>99,6135<br/>99,6135<br/>99,6135<br/>99,6135<br/>99,6135<br/>99,6135<br/>99,156<br/>99,156<br/>99,156<br/>99,156<br/>99,156<br/>99,157<br/>100<br/>99,542<br/>99,542<br/>99,542<br/>99,542<br/>99,542<br/>100<br/>99,542<br/>100<br/>99,542<br/>100<br/>99,545<br/>100<br/>99,545<br/>100<br/>99,557<br/>100<br/>99,577<br/>100<br/>99,577<br/>100</th><th>well-1-10         103-2         102-0         103-2           well-1-10         103-2         104-2         106-3           well-1-10         107-2         103-2         21           well-1-10         107-2         103-2         22           well-1-10         107-2         103-2         21           well-1-10         107-2         103-2         21           well-1-10         107-2         103-2         25           well-1-10         107-2         103-2         25           well-1-10         107-2         103-2         25           well-1-11         113-2         24         12         27           well-1-11         113-2         24         12         74           well-1-11         113-4         1172         114-3         285           well-1-11         114-1         112-2         24         14         147         194           well-1-11         114-1&lt;1172         114-3         285         84         147         196         15         114         114         114         114         114         114         114         114         114         114         114         114         114</th><th>0         0           0         0</th><th>100<br/>99,385<br/>99,632<br/>99,584<br/>99,582<br/>99,582<br/>99,582<br/>99,582<br/>99,582<br/>99,582<br/>99,315<br/>99,315<br/>99,315<br/>99,315<br/>99,315<br/>99,319<br/>99,319<br/>99,319<br/>99,319<br/>99,328<br/>100<br/>100<br/>100<br/>199,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>99,587<br/>100<br/>100<br/>100<br/>100<br/>99,587<br/>100<br/>100<br/>100<br/>100<br/>99,587<br/>100<br/>100<br/>100<br/>100<br/>99,587<br/>100<br/>100<br/>100<br/>99,587<br/>100<br/>100<br/>100<br/>100<br/>99,587<br/>100<br/>100<br/>100<br/>99,587<br/>100<br/>100<br/>100<br/>99,597<br/>100<br/>100<br/>100<br/>99,597<br/>100<br/>100<br/>100<br/>99,597<br/>100<br/>100<br/>100<br/>100<br/>99,597<br/>100<br/>100<br/>100<br/>99,597<br/>100<br/>100<br/>100<br/>99,597<br/>100<br/>100<br/>100<br/>99,597<br/>100<br/>100<br/>99,597<br/>100<br/>100<br/>99,597<br/>100<br/>100<br/>100<br/>99,597<br/>100<br/>100<br/>100<br/>99,597<br/>100<br/>100<br/>100<br/>99,597<br/>100<br/>100<br/>100<br/>100<br/>99,597<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>10</th><th>Section 2017 Section 2017
Secti</th><th>102147<br/>103318<br/>104296<br/>103889<br/>107490<br/>108472<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>1089555<br/>1089555<br/>1089555<br/>1089555<br/>1089555<br/>10895555<br/>1089555<br/>1085555</th><th>102391<br/>102395<br/>106832<br/>107489<br/>108434<br/>108434<br/>108434<br/>108434<br/>113881<br/>113885<br/>12965<br/>120408<br/>122304<br/>123204<br/>123204<br/>123204<br/>124856<br/>120408<br/>122304<br/>123204<br/>124856<br/>120408<br/>122304<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123204<br/>123200<br/>1232004<br/>1232004<br/>1232004<br/>1232004<br/>1232004<br/>1232004<br/>1232004<br/>1232004<br/>1232004<br/>1</th><th>2)78<br/>2)78<br/>2)78<br/>2)78<br/>2)78<br/>2)78<br/>2)78<br/>2)78</th><th></th><th>99.385<br/>99.623<br/>99.624<br/>99.654<br/>99.654<br/>99.682<br/>99.289<br/>99.315<br/>99.135<br/>99.706<br/>99.279<br/>100<br/>99.279<br/>100<br/>99.270<br/>99.103<br/>100<br/>99.279<br/>100<br/>99.819<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.859<br/>100<br/>99.859<br/>100<br/>99.859<br/>100<br/>99.859<br/>100<br/>99.859<br/>100<br/>99.859<br/>100<br/>99.859<br/>100<br/>99.859<br/>100<br/>99.859<br/>100<br/>99.859<br/>100<br/>99.859<br/>100<br/>99.859<br/>100<br/>99.859<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>1</th></td<>   
   | 04458 0032037 (1990) (1  | s         978           2288         624           2389         624           7         945           241         7           945         241           2         241           8         71           94         233           2         241           8         714           1         255           642         747           2         747           1         1656           642         7453           2         7453           2         141           1         1655           882         1419           2         143           2         143           3         363           3         364           9         2119           3         365           976         2087           2         576           9         21  | (c)         (d)           (d)         (d)   | 99,692<br>99,748<br>99,6135<br>99,6135<br>99,6135<br>99,6135<br>99,6135<br>99,6135<br>99,156<br>99,156<br>99,156<br>99,156<br>99,156<br>99,157<br>100<br>99,542<br>99,542<br>99,542<br>99,542<br>99,542<br>100<br>99,542<br>100<br>99,542<br>100<br>99,545<br>100<br>99,545<br>100<br>99,557<br>100<br>99,577<br>100<br>99,577<br>100   | well-1-10         103-2         102-0         103-2           well-1-10         103-2         104-2         106-3           well-1-10         107-2         103-2         21           well-1-10         107-2         103-2         22           well-1-10         107-2         103-2         21           well-1-10         107-2         103-2         21           well-1-10         107-2         103-2         25           well-1-10         107-2         103-2         25           well-1-10         107-2         103-2         25           well-1-11         113-2         24         12         27           well-1-11         113-2         24         12         74           well-1-11         113-4         1172         114-3         285           well-1-11         114-1         112-2         24         14         147         194           well-1-11         114-1<1172         114-3         285         84         147         196         15         114         114         114         114         114         114         114         114         114         114         114         114         114   
   | 0         0             
   
  | 100<br>99,385<br>99,632<br>99,584<br>99,582<br>99,582<br>99,582<br>99,582<br>99,582<br>99,582<br>99,315<br>99,315<br>99,315<br>99,315<br>99,315<br>99,319<br>99,319<br>99,319<br>99,319<br>99,328<br>100<br>100<br>100<br>199,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>99,587<br>100<br>100<br>100<br>100<br>99,587<br>100<br>100<br>100<br>100<br>99,587<br>100<br>100<br>100<br>100<br>99,587<br>100<br>100<br>100<br>99,587<br>100<br>100<br>100<br>100<br>99,587<br>100<br>100<br>100<br>99,587<br>100<br>100<br>100<br>99,597<br>100<br>100<br>100<br>99,597<br>100<br>100<br>100<br>99,597<br>100<br>100<br>100<br>100<br>99,597<br>100<br>100<br>100<br>99,597<br>100<br>100<br>100<br>99,597<br>100<br>100<br>100<br>99,597<br>100<br>100<br>99,597<br>100<br>100<br>99,597<br>100<br>100<br>100<br>99,597<br>100<br>100<br>100<br>99,597<br>100<br>100<br>100<br>99,597<br>100<br>100<br>100<br>100<br>99,597<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>10   
   | Section 2017 Secti  | 102147<br>103318<br>104296<br>103889<br>107490<br>108472<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>1089555<br>1089555<br>1089555<br>1089555<br>1089555<br>10895555<br>1089555<br>1085555  | 102391<br>102395<br>106832<br>107489<br>108434<br>108434<br>108434<br>108434<br>113881<br>113885<br>12965<br>120408<br>122304<br>123204<br>123204<br>123204<br>124856<br>120408<br>122304<br>123204<br>124856<br>120408<br>122304<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123204<br>123200<br>1232004<br>1232004<br>1232004<br>1232004<br>1232004<br>1232004<br>1232004<br>1232004<br>1232004<br>1  | 2)78<br>2)78<br>2)78<br>2)78<br>2)78<br>2)78<br>2)78<br>2)78  
  |  | 99.385<br>99.623<br>99.624<br>99.654<br>99.654<br>99.682<br>99.289<br>99.315<br>99.135<br>99.706<br>99.279<br>100<br>99.279<br>100<br>99.270<br>99.103<br>100<br>99.279<br>100<br>99.819<br>100<br>99.842<br>100<br>99.842<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.859<br>100<br>99.859<br>100<br>99.859<br>100<br>99.859<br>100<br>99.859<br>100<br>99.859<br>100<br>99.859<br>100<br>99.859<br>100<br>99.859<br>100<br>99.859<br>100<br>99.859<br>100<br>99.859<br>100<br>99.859<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>1  |
| MV Repath billing surface protein (Cop-HSL)           RAP4 RNA pal assoc protein (Cop-HSL)           RAP4 RNA pal assoc protein (Cop-HSL)           DNA toposisemerase type 1 (Cop-HSR)           (CYV-8-116           BTAA copting come large schematic (Cop-HSL)           Virian entername assembly proteins (VAAP) (Cop-HT R)           BTAA copting come large schematic (Cop-DIR)           Virian core (Cop-DSR)           Virian core (Cop-DSR)           Mendpart Core (Cop-DSR)           Mingencers schematic (Cop-DSR)           BRNA decopting congres (Cop-DSR)           BRNA decopting congres (Cop-DSR)           BRNA decopting congres (Cop-DSR)           Affrage, NPH1 (Cop-D11L)           BRNA decopting congres (Cop-D10R)           VITF-3 clast transcription factors 2) (Cop-D11L)           VITF-3 clast transcription factors 2) (Cop-D12L)           VITF-3 clast tran  | IE31.           IH31.           IH47.           IH57.           IH77.           D18.           D37.           D38.           D66.           D77.           D108.           D97.           D111.           D112.           D111.           D111.           D131.           A11.           A21.           A31.           A31.           A34.           A58.           A62.           A11.           A12.           A31.           A31.           A31.           A31.           A32.           A34.           A34.           A34.           A34.           A34.           A34.           A111.           A121.           A131.           A144.   | CIXVII2<br>CIXVII2<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII3<br>CIXVII  | NoF-10         1037-10           NoF-100         103723           NoF-100         103723           NoF-100         103723           NoF-100         103723           NoF-110         103723           NoF-110         103723           NoF-111         107244           NoF-111         107855           NoF-111         107857           NoF-111         107857           NoF-111         107857           NoF-114         111854           NoF-115         112827           NoF-114         111854           NoF-115         112827           NoF-114         11854           NoF-115         112827           NoF-114         11854           NoF-117         136861           NoF-120         18474           NoF-121         18474           NoF-122         128474           NoF-122         128475           NoF-122         128475           NoF-123         12845           NoF-124         12744           NoF-125         12806           NoF-128         128061           NoF-129         128061  
   
   
  | 120         570           120         978           120         978           120         970           120         978           128         984           121         839           137         441           1389         945           224         441           120         714           656         657           1317         486           338         915           131         486           338         915           131         486           1388         915           141         747           141         747           170         1896           607         864           231         1656           707         453           1935         577           822         1193           9300         867           464         314           3300         867           403         348           322         2682           233         979           1049         213 <td< th=""><th>(c)           (c)           (c)</th><th>38.342           99.385           99.385           99.385           99.385           99.82           99.82           99.39           99.31           99.32           99.33           99.32           99.33           99.34           99.35           99.35           99.35           99.35           99.35           99.35           99.35           99.35           99.35           99.35           99.36           99.37           99.38           99.39           99.42           99.31           100           100           99.36           99.37           99.38           99.39           99.39           99.30           99.318           100           99.324           99.305           98.607           98.607           98.808           100           90.838</th><th>Mar.210         (Mod.2016)           Mar.210         (Mod.2016)           Mar.210         (Mod.2016)           Mar.210         (Mod.2016)           Mar.2110         (MS73)           Mar.2111         (MS73)           Mar.2111         (MS73)           Mar.2111         (MS73)           Mar.2111         (MS73)           Mar.2112         (MS73)           Mar.2113         (MS44)           Mar.2114         (MS73)           Mar.2114         (MS74)           Mar.2114         (MS46)           Mar.2114         (MS46)           Mar.2114         (MS46)           Mar.2114         (MS46)           Mar.2114         (MS46)           Mar.2114         (MS46)           Mar.2121         (MS46)           Mar.2121         (MS46)           Mar.2121         (MS46)           Mar.2121         (MS46)           Mar.2121         (MS47)           Mar.2121         (MS47)           Mar.2121         (MS47)           Mar.2121         (MS47)           Mar.2121         (MS47)           Mar.2121         (MS47)           Mar.2123<!--</th--><th><math display="block">\begin{array}{cccc} -270 &amp; (-)^{2}\\ -270 &amp; (-)^{2}\\ -288 &amp; (-) \\ -288 &amp; (-) \\ -945 &amp; (+) \\ -945 &amp; (+) \\ -945 &amp; (+) \\ -945 &amp; (+) \\ -2358 &amp; (+) \\ -1914 &amp; (-) \\ -2358 &amp; (+) \\ -1914 &amp; (-) \\ -2358 &amp; (+) \\ -1914 &amp; (-) \\ -2358 &amp; (+) \\ -1915 &amp; (-) \\ -1016 &amp; (-) \\ -246 &amp; (-) \\ -1016 &amp; (</math></th><th>99,69,<br/>99,744<br/>99,143<br/>99,744<br/>99,613<br/>99,744<br/>99,948<br/>99,948<br/>99,948<br/>99,9455<br/>100<br/>99,9455<br/>100<br/>99,9455<br/>100<br/>99,9455<br/>100<br/>99,9455<br/>100<br/>99,9455<br/>100<br/>99,9455<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>1</th><th>Nath         Nath           Nath         Nath           Nath<th>04158 005320 00556 005576 0055</th><th>s         978           3         238           3         258           3         258           47         945           5         441           7         945           5         441           8         714           8         714           9         2238           9         148           7         194           9         148           6         915           2         247           1         1656           915         263           2         234           1         1935           2         234           1         1935           3         563           5         363           5         282           2         2411           1935         363           5         2682           2         235           3         563           3         576           3         576           3         576           3         576           3</th></th></th></td<> <th>(c)         (d)           (d)         (d)           (d)</th>
<th>99,692<br/>99,748<br/>99,148<br/>99,613<br/>99,613<br/>99,613<br/>99,613<br/>99,613<br/>99,613<br/>99,614<br/>99,915<br/>99,9156<br/>99,156<br/>99,156<br/>99,156<br/>99,157<br/>99,162<br/>99,652<br/>99,657<br/>99,652<br/>99,657<br/>100<br/>99,652<br/>99,657<br/>100<br/>99,857<br/>100<br/>99,857<br/>100<br/>98,856<br/>70,856<br/>99,575<br/>90,577<br/>100<br/>98,555<br/>90,577<br/>100<br/>98,555<br/>90,577<br/>100<br/>98,555<br/>100<br/>99,577<br/>90,577<br/>100<br/>90,572<br/>90,577<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100<br/>90,572<br/>100,572<br/>100,572<br/>100,572<br/>100,572<br/>100,572<br/>100,572<br/>100,572<br/>100,572<br/>100,572<br/>100,572<br/>100,572<br/>100,572<br/>100,572<br/>100,572<br/>100,572<br/>100,572<br/>100,572<br/>100,572<br/>100,</th> <th>Barriello (1)         Biological (1)         Biological (1)           Biological (1)         Biological (1)         Biological (1)         Biological (1)           Biological (1)         Biological (1)         Biological (1)         Biological (1)         Biological (1)</th> <th>0         0           0         0</th> <th>100         99,385         99,385           99,262         99,385         99,682           97,945         99,937         99,315           99,937         99,315         99,319           99,937         99,379         99,319           99,9379         99,319         100           99,9379         99,315         100           99,9379         99,319         100           99,9379         99,319         100           99,856,667         100         100           99,462         99,589,718         86,667           99,718         90,666         100           99,462         98,667         100           99,462         98,667         100           99,478         86,667         100           99,486         99,478         100           99,486         99,479         96,868           90,686         100         100           99,482         98,489         100</th> <th>Section 2017 Section 2017 Secti</th> <th>102147<br/>103318<br/>104296<br/>106869<br/>107490<br/>108472<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>1089555<br/>1089555<br/>1089555<br/>1089555<br/>1089555<br/>1089555<br/>1089555<br/>1089555<br/>1089555<br/>1089555<br/>1089555<br/>1089555<br/>1089555<br/>1089555<br/>1089555<br/>1089555<br/>1089555<br/>1089555<br/>10895555<br/>10895555<br/>10895555<br/>1089555555<br/>108955555</th>
<th>102295<br/>106683<br/>107489<br/>108434<br/>108912<br/>111489<br/>111889<br/>111889<br/>111539<br/>112596<br/>112596<br/>112596<br/>112596<br/>112005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>12005<br/>1200</th> <th>578           978           2388           621           945           441           2535           441           714           657           2388           915           662           747           1896           864           1656           615           231           1938           889           495           1119           2133           2682           2687           576           213           213           213           213           213</th> <th></th> <th>99.385<br/>99.385<br/>99.623<br/>98.544<br/>99.854<br/>99.854<br/>99.355<br/>99.315<br/>99.156<br/>97.706<br/>99.315<br/>100<br/>99.379<br/>199.256<br/>100<br/>99.379<br/>199.379<br/>199.542<br/>100<br/>99.542<br/>100<br/>99.542<br/>100<br/>99.542<br/>100<br/>99.542<br/>100<br/>99.542<br/>100<br/>99.542<br/>100<br/>99.542<br/>100<br/>99.556<br/>100<br/>99.556<br/>99.556<br/>99.556<br/>99.556<br/>99.556<br/>99.556<br/>99.556<br/>99.556<br/>99.558<br/>99.558<br/>99.558<br/>99.558<br/>99.558</th>   | (c)                             | 38.342           99.385           99.385           99.385           99.385           99.82           99.82           99.39           99.31           99.32           99.33           99.32           99.33           99.34           99.35           99.35           99.35           99.35           99.35           99.35           99.35           99.35           99.35           99.35           99.36           99.37           99.38           99.39           99.42           99.31           100           100           99.36           99.37           99.38           99.39           99.39           99.30           99.318           100           99.324           99.305           98.607           98.607           98.808           100           90.838  | Mar.210         (Mod.2016)           Mar.210         (Mod.2016)           Mar.210         (Mod.2016)           Mar.210         (Mod.2016)           Mar.2110         (MS73)           Mar.2111         (MS73)           Mar.2111         (MS73)           Mar.2111         (MS73)           Mar.2111         (MS73)           Mar.2112         (MS73)           Mar.2113         (MS44)           Mar.2114         (MS73)           Mar.2114         (MS74)           Mar.2114         (MS46)           Mar.2114         (MS46)           Mar.2114         (MS46)           Mar.2114         (MS46)           Mar.2114         (MS46)           Mar.2114         (MS46)           Mar.2121         (MS46)           Mar.2121         (MS46)           Mar.2121         (MS46)           Mar.2121         (MS46)           Mar.2121         (MS47)           Mar.2121         (MS47)           Mar.2121         (MS47)           Mar.2121         (MS47)           Mar.2121         (MS47)           Mar.2121         (MS47)           Mar.2123 </th <th><math display="block">\begin{array}{cccc} -270 &amp; (-)^{2}\\ -270 &amp; (-)^{2}\\ -288 &amp; (-) \\ -288 &amp; (-) \\ -945 &amp; (+) \\ -945 &amp; (+) \\ -945 &amp; (+) \\ -945 &amp; (+) \\ -2358 &amp; (+) \\ -1914 &amp; (-) \\ -2358 &amp; (+) \\ -1914 &amp; (-) \\ -2358 &amp; (+) \\ -1914 &amp; (-) \\ -2358 &amp; (+) \\ -1915 &amp; (-) \\ -1016 &amp; (-) \\ -246 &amp; (-) \\ -1016 &amp; (</math></th> <th>99,69,<br/>99,744<br/>99,143<br/>99,744<br/>99,613<br/>99,744<br/>99,948<br/>99,948<br/>99,948<br/>99,9455<br/>100<br/>99,9455<br/>100<br/>99,9455<br/>100<br/>99,9455<br/>100<br/>99,9455<br/>100<br/>99,9455<br/>100<br/>99,9455<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>1</th> <th>Nath         Nath           Nath         Nath           Nath<th>04158 005320 00556 005576
005576 0055</th><th>s         978           3         238           3         258           3         258           47         945           5         441           7         945           5         441           8         714           8         714           9         2238           9         148           7         194           9         148           6         915           2         247           1         1656           915         263           2         234           1         1935           2         234           1         1935           3         563           5         363           5         282           2         2411           1935         363           5         2682           2         235           3         563           3         576           3         576           3         576           3         576           3</th></th>  
   | $\begin{array}{cccc} -270 & (-)^{2}\\ -270 & (-)^{2}\\ -288 & (-) \\ -288 & (-) \\ -945 & (+) \\ -945 & (+) \\ -945 & (+) \\ -945 & (+) \\ -2358 & (+) \\ -2358 & (+) \\ -2358 & (+) \\ -2358 & (+) \\ -2358 & (+) \\ -1914 & (-) \\ -2358 & (+) \\ -1914 & (-) \\ -2358 & (+) \\ -1914 & (-) \\ -2358 & (+) \\ -1915 & (-) \\ -1016 & (-) \\ -246 & (-) \\ -1016 & (-) \\ -1016 & (-) \\ -1016 & (-) \\ -1016 & (-) \\ -1016
& (-) \\ -1016 & ($   | 99,69,<br>99,744<br>99,143<br>99,744<br>99,613<br>99,744<br>99,948<br>99,948<br>99,948<br>99,9455<br>100<br>99,9455<br>100<br>99,9455<br>100<br>99,9455<br>100<br>99,9455<br>100<br>99,9455<br>100<br>99,9455<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>1  | Nath         Nath           Nath <th>04158 005320 00556 005576 0055</th> <th>s         978           3         238           3         258           3         258           47         945           5         441           7         945           5         441           8         714           8         714           9         2238           9         148           7         194           9         148           6         915           2         247           1         1656           915         263           2         234           1         1935           2         234           1         1935           3         563           5         363           5         282           2         2411           1935         363           5         2682           2         235           3         563           3         576           3         576           3         576           3         576           3</th>   
   
   | 04158 005320 00556 005576 0055  | s         978           3         238           3         258           3         258           47         945           5         441           7         945           5         441           8         714           8         714           9         2238           9         148           7         194           9         148           6         915           2         247           1         1656           915         263           2         234           1         1935           2         234           1         1935           3         563           5         363           5         282           2         2411           1935         363           5         2682           2         235           3         563           3         576           3         576           3         576           3         576           3      | (c)         (d)           (d)         (d)           (d) |
99,692<br>99,748<br>99,148<br>99,613<br>99,613<br>99,613<br>99,613<br>99,613<br>99,613<br>99,614<br>99,915<br>99,9156<br>99,156<br>99,156<br>99,156<br>99,157<br>99,162<br>99,652<br>99,657<br>99,652<br>99,657<br>100<br>99,652<br>99,657<br>100<br>99,857<br>100<br>99,857<br>100<br>98,856<br>70,856<br>99,575<br>90,577<br>100<br>98,555<br>90,577<br>100<br>98,555<br>90,577<br>100<br>98,555<br>100<br>99,577<br>90,577<br>100<br>90,572<br>90,577<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100<br>90,572<br>100,572<br>100,572<br>100,572<br>100,572<br>100,572<br>100,572<br>100,572<br>100,572<br>100,572<br>100,572<br>100,572<br>100,572<br>100,572<br>100,572<br>100,572<br>100,572<br>100,572<br>100,572<br>100,                               | Barriello (1)         Biological (1)         Biological (1)           Biological (1)         Biological (1)         Biological (1)         Biological (1)           Biological (1)         Biological (1)         Biological (1)         Biological (1)         Biological (1)   
   | 0         0             
  | 100         99,385         99,385           99,262         99,385         99,682           97,945         99,937         99,315           99,937         99,315         99,319           99,937         99,379         99,319           99,9379         99,319         100           99,9379         99,315         100           99,9379         99,319         100           99,9379         99,319         100           99,856,667         100         100           99,462         99,589,718         86,667           99,718         90,666         100           99,462         98,667         100           99,462         98,667         100           99,478         86,667         100           99,486         99,478         100           99,486         99,479         96,868           90,686         100         100           99,482         98,489         100  
   | Section 2017 Secti  |
102147<br>103318<br>104296<br>106869<br>107490<br>108472<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>1089555<br>1089555<br>1089555<br>1089555<br>1089555<br>1089555<br>1089555<br>1089555<br>1089555<br>1089555<br>1089555<br>1089555<br>1089555<br>1089555<br>1089555<br>1089555<br>1089555<br>1089555<br>10895555<br>10895555<br>10895555<br>1089555555<br>108955555  | 102295<br>106683<br>107489<br>108434<br>108912<br>111489<br>111889<br>111889<br>111539<br>112596<br>112596<br>112596<br>112596<br>112005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>12005<br>1200 | 578           978           2388           621           945           441           2535           441           714           657           2388           915           662           747           1896           864           1656           615           231           1938           889           495           1119           2133           2682           2687           576           213           213           213           213           213  |   
  | 99.385<br>99.385<br>99.623<br>98.544<br>99.854<br>99.854<br>99.355<br>99.315<br>99.156<br>97.706<br>99.315<br>100<br>99.379<br>199.256<br>100<br>99.379<br>199.379<br>199.542<br>100<br>99.542<br>100<br>99.542<br>100<br>99.542<br>100<br>99.542<br>100<br>99.542<br>100<br>99.542<br>100<br>99.542<br>100<br>99.556<br>100<br>99.556<br>99.556<br>99.556<br>99.556<br>99.556<br>99.556<br>99.556<br>99.556<br>99.558<br>99.558<br>99.558<br>99.558<br>99.558  |
| IMV legath hindling unface protein (Cop-HSL)<br>EAPPA RNA pail assocs protein (Cop-HSL)<br>EAPPA RNA pail assocs protein (Cop-HSL)<br>DNA toposisomerase type 1 (Cop-HSR)<br>(Cop-Ha-16<br>Viral methane assembly proteins (VMAP) (Cop-HTR)<br>and NA capping come large submit (Cop-DSR)<br>Virinis cores (Cop-DSR)<br>Urinis cores (Cop-DSR)<br>Trade-DNA glycosylase, DNA polymerase processi vity factor (Cop-D4R)<br>NTPase, DNA physics (Cop-D5R)<br>Marphogenesis, VETT-4 (cody transcription fact or small) (Cop-D6R)<br>ENA apping comes, VETT-4 (cody transcription fact or small) (Cop-D6R)<br>Marphogenesis, VETT-4 (cody transcription fact or small) (Cop-D6R)<br>ENA apping compact (Cop-D5R)<br>And Park appendic compact of the second of t   | IEIL           IHL           IHR           IHR           IHR           IBR           DIR           AIL    | CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII2<br>CIAVII  | NoF-108         1037-10           NoF-108         103723           NoF-108         103723           NoF-108         103723           NoF-108         103723           NoF-110         107274           NoF-111         107574           NoF-111         107574           NoF-111         107574           NoF-111         107574           NoF-111         107585           NoF-114         115540           NoF-121         15630           NoF-122         158710           NoF-122         158710           NoF-122         158701           NoF-122         158701           NoF-122         158612           NoF-123         138413           NoF-124         1383413           NoF-133         138451           NoF-133         138451   
   
   
   | 120         570           120         978           120         978           100         978           100         978           100         978           1839         945           1839         945           1839         945           117         441           865         2535           900         714           465         255           900         714           453         358           915         213           388         915           388         915           388         915           388         915           388         915           451         456           677         642           844         747           710         1896           664         224           913         1656           779         822           930         867           930         867           930         867           930         867           931         579           957<  
   
   | (c)           (c) |
30.542<br>99.335<br>99.335<br>99.526<br>99.526<br>99.526<br>99.526<br>99.526<br>99.526<br>99.526<br>99.526<br>99.526<br>99.526<br>99.526<br>99.526<br>99.526<br>99.526<br>99.526<br>99.526<br>99.526<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99.527<br>99 | Mar.210         (Mod.2)         (Mod.2)           Mar.210         (Mod.2)         (Mod.2)           Mar.210         (Mod.2)         (Mod.2)           Mar.210         (Mod.2)         (Mod.2)           Mar.2110         (Mod.2)         (Mod.2)           Mar.2111         (Mod.2)         (Mod.2)           Mar.2112         (Mod.2)         (Mod.2)           Mar.2113         (Mod.2)         (Mod.2)           Mar.2114         (Mod.2)         (Mod.2)           Mar.2115         (Mod.2)         (Mod.2)           Mar.2120         (Mod.2)         (Mod.2)         (Mod.2)           Mar.2121         (Mod.2)         (Mod.2)         (Mod.2)           Mar.2122         (Mod.2)         (Mod.2)         (Mod.2)           Mar.213         (Mod.2)         (Mod.2)         (Mod.2)           Mar.214         (Mod.2)         (Mod.2)         (Mod.2)           Mar.   
   
  | $\begin{array}{cccccccccccccccccccccccccccccccccccc$   
  | 99.69<br>99.69<br>99.74<br>96.13<br>99.58<br>99.68<br>99.58<br>99.58<br>99.57<br>100<br>99.57<br>100<br>99.57<br>100<br>99.57<br>100<br>99.57<br>100<br>99.57<br>100<br>99.57<br>100<br>99.57<br>100<br>99.57<br>100<br>99.57<br>100<br>99.57<br>100<br>99.57<br>100<br>99.57<br>100<br>99.57<br>100<br>99.57<br>100<br>99.57<br>100<br>99.57<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>90.55<br>100<br>90.55<br>100<br>90.55<br>100<br>90.55<br>100<br>90.55<br>100<br>90.55<br>100<br>90.55<br>100<br>90.55<br>100<br>90<br>100<br>90.55<br>100<br>1 | North-100           North-100           North-100           North-100           North-100           North-101           North-102           North-102           North-112           North-122           North-123           North-124           North-125           North-127           North-128           North-128           North-131           North-132           North-133           North-133           North-134           North-135           North-137           North-138           North-138           North-138           North-138           North-138           North-138           North-138           North-138           North-138           North-138 <td< th=""><th>04438 0633 079700 07970 07970 07970 07970 07970 07970 07970 07970 07970</th><th>s         978           2         288           2         248           2         624           7         945           2         624           2         2435           2         2431           2         2432           2         2432           2         2432           2         2431           3         2332           2         2441           3         233           3         263           2         747           1         1656           2         2441           1         1656           483         1199           483         1199           484         867           3         363           493         576           9         208           2         2082           2         2082           2         2082           2         2082           2         2082           2         2082           2         2082           2         2082</th><th>(c)         (d)           (d)         (d)          
(d)</th><th>99,692<br/>99,748<br/>99,6135<br/>99,6135<br/>99,6135<br/>99,6135<br/>99,6135<br/>99,6135<br/>99,150<br/>99,150<br/>99,150<br/>99,150<br/>99,150<br/>99,150<br/>99,150<br/>99,150<br/>99,150<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>99,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,502<br/>90,</th><th>well-1-00         013-20         015-20         976           well-1-100         013-20         014-20         016-30         016-30           well-1-100         013-20         22         012         021</th><th>0         0           0         0</th><th>100         99385           992385         99623           99623         99624           97945         99682           97945         99315           99319         99315           99319         99315           99319         99315           99319         99315           99319         99316           99319         99317           99013         100           99319         99842           99041         100           9050         990462           990462         990462           990462         990463           990462         990463           990462         990462           990462         990462           990462         990462           990462         990462           990462         990462           990462         990462           990462         990462           990462         990462           990462         990462           990462         990462           990462         990462           990462         990462           990462         990462</th><th>Section 2 of the section 2 of the
sectio</th><th>102147<br/>103318<br/>104296<br/>106869<br/>107490<br/>108472<br/>108955<br/>108955<br/>108955<br/>111448<br/>111488<br/>111448<br/>111488<br/>111594<br/>111448<br/>111488<br/>111594<br/>111448<br/>111594<br/>111488<br/>111594<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>111488<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148<br/>11148</th><th>104295<br/>104295<br/>106683<br/>107489<br/>108434<br/>111888<br/>111888<br/>1118982<br/>111993<br/>1118082<br/>112994<br/>113509<br/>112993<br/>1118082<br/>119655<br/>122045<br/>122041<br/>12300<br/>124887<br/>12565<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>123078<br/>132941<br/>133861<br/>133863<br/>132941<br/>133863<br/>132941<br/>133863<br/>132941<br/>133863<br/>132941<br/>133863<br/>132941<br/>133863<br/>132941<br/>133863<br/>132941<br/>133863<br/>132941<br/>133863<br/>132941<br/>133863<br/>132941<br/>133863<br/>132941<br/>133863<br/>132941<br/>133863<br/>132941<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>133863<br/>135863<br/>135863<br/>1</th><th>978<br/>978<br/>2388<br/>421<br/>945<br/>441<br/>714<br/>714<br/>714<br/>714<br/>714<br/>714<br/>714<br/>714<br/>714</th><th></th><th>99.385<br/>99.623<br/>99.624<br/>97.645<br/>99.682<br/>97.645<br/>99.289<br/>99.156<br/>99.289<br/>99.156<br/>99.285<br/>99.156<br/>99.2766<br/>99.285<br/>99.156<br/>99.2766<br/>99.2766<br/>99.2766<br/>99.2766<br/>99.2766<br/>99.2766<br/>99.2766<br/>99.2766<br/>99.2766<br/>99.2766<br/>99.2766<br/>99.2767<br/>100<br/>100<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.845<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>99.85<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>10</th></td<> | 04438 0633 07970
07970 079700 07970 07970 07970 07970 07970 07970 07970 07970 07970   | s         978           2         288           2         248           2         624           7         945           2         624           2         2435           2         2431           2         2432           2         2432           2         2432           2         2431           3         2332           2         2441           3         233           3         263           2         747           1         1656           2         2441           1         1656           483         1199           483         1199           484         867           3         363           493         576           9         208           2         2082           2         2082           2         2082           2         2082           2         2082           2         2082           2         2082           2         2082 | (c)         (d)           (d)         (d)           (d) | 99,692<br>99,748<br>99,6135<br>99,6135<br>99,6135<br>99,6135<br>99,6135<br>99,6135<br>99,150<br>99,150<br>99,150<br>99,150<br>99,150<br>99,150<br>99,150<br>99,150<br>99,150<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>99,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,502<br>90,   | well-1-00         013-20         015-20         976           well-1-100         013-20         014-20         016-30         016-30           well-1-100         013-20         22         012         021  
   | 0         0             
  | 100         99385           992385         99623           99623         99624           97945         99682           97945         99315           99319         99315           99319         99315           99319         99315           99319         99315           99319         99316           99319         99317           99013         100           99319         99842           99041         100           9050         990462           990462         990462           990462         990463           990462         990463           990462         990462           990462         990462           990462         990462           990462         990462           990462         990462           990462         990462           990462         990462           990462         990462           990462         990462           990462         990462           990462         990462           990462         990462           990462         990462   
   
   | Section 2 of the sectio  | 102147<br>103318<br>104296<br>106869<br>107490<br>108472<br>108955<br>108955<br>108955<br>111448<br>111488<br>111448<br>111488<br>111594<br>111448<br>111488<br>111594<br>111448<br>111594<br>111488<br>111594<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>111488<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148<br>11148  | 104295<br>104295<br>106683<br>107489<br>108434<br>111888<br>111888<br>1118982<br>111993<br>1118082<br>112994<br>113509<br>112993<br>1118082<br>119655<br>122045<br>122041<br>12300<br>124887<br>12565<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>123078<br>132941<br>133861<br>133863<br>132941<br>133863<br>132941<br>133863<br>132941<br>133863<br>132941<br>133863<br>132941<br>133863<br>132941<br>133863<br>132941<br>133863<br>132941<br>133863<br>132941<br>133863<br>132941<br>133863<br>132941<br>133863<br>132941<br>133863<br>132941<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>133863<br>135863<br>135863<br>1   | 978<br>978<br>2388<br>421<br>945<br>441<br>714<br>714<br>714<br>714<br>714<br>714<br>714<br>714<br>714   |   
  | 99.385<br>99.623<br>99.624<br>97.645<br>99.682<br>97.645<br>99.289<br>99.156<br>99.289<br>99.156<br>99.285<br>99.156<br>99.2766<br>99.285<br>99.156<br>99.2766<br>99.2766<br>99.2766<br>99.2766<br>99.2766<br>99.2766<br>99.2766<br>99.2766<br>99.2766<br>99.2766<br>99.2766<br>99.2767<br>100<br>100<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.845<br>100<br>99.85<br>100<br>99.85<br>100<br>99.85<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>10  |
| INV Repath billing under protein (Cop-HSL)           RAPB (RX) pal assoc protein (Cop-HSL)           RAPB (RX) pal assoc protein (Cop-HSL)           INT F4 (the transpring function (Cop-HSL)           DNA topositemera: type 1 (Cop-HSR)           (CYV-8-116           Wirsh network (Cop-HSR)           (CYV-8-116           MRA capping came large submit (Cop-DIR)           Wirsh network (Cop-DSR)           Wirsh network (Cop-DSR)           Wirsh network (Cop-DSR)           Mirabase (Cop-DSR)           Mirabase (Cop-DSR)           Marphagenecity, VETF (early transcription fact or small) (Cop-D6R)           RNA Asping campation (Cop-DSR)           Marphagenecity, VETF (early transcription fact or small) (Cop-D6R)           RNA Asping campare (Cop-DSR)           MRNA decapting campare (Cop-DSR)           MRNA decapting campare (Cop-DSR)           MRNA decapting campare (Cop-DSR)           MRNA decapting campare small submit (Cop-DSR)           ATPase, NFH1 (Cop-D111)           MRNA decapting campare small submit (Cop-D121)           VI, Tas automose 100 (for pA11)           VITF-3 (the transcription factor 2) (Cop-A11)           VITF-3 (the transcription factor 2) (Cop-A11)           VITF-3 (the transcription factor 3) (Cop-A11)           VITF-4 (act transcription factor 4) (Cop-A1  | IE31.           H81.           H42.           H5R           H6R           JIR           DIR           DJR           DJR           DJR           DAR           DFR           DFR | CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVIII<br>CIXVII  | NoF-10         1037-0           NoF-10         1037-20           NoF-100         103723           NoF-100         103723           NoF-100         103723           NoF-110         103723           NoF-110         107274           NoF-111         107585           NoF-111         107855           NoF-112         108771           NoF-113         107857           NoF-114         111851           NoF-115         112827           NoF-117         113800           NoF-118         113000           NoF-119         118026           NoF-120         118474           NoF-121         118474           NoF-122         128474           NoF-122         128474           NoF-122         128474           NoF-122         128472           NoF-122         128472           NoF-122         128472           NoF-123         128461           NoF-123         128461           NoF-131         128461           NoF-131         128461           NoF-133         13443           NoF-133         13441 <tr< th=""><th>120         570           120         978           120         978           120         970           120         978           128         984           121         839           137         441           985         2535           294         441           000         714           656         657           045         2538           999         1914           451         486           338         915           999         1914           451         486           417         710           1896         667           991         1914           451         486           453         1935           977         862           109         495           224         1193           957         873           320         867           464         348           322         2682           239         957           109         213           489         273           4</th><th>(c)           (c)           (c)</th><th>38.542           99.385           99.385           99.385           99.385           99.82           99.82           99.52           99.52           99.52           99.52           99.52           99.52           99.52           99.52           99.52           99.52           99.52           99.52           99.52           99.52           99.52           99.53           90.54           99.55           99.54           99.55           99.55           99.55           99</th><th>Mar.210         (Mod.2)         (Mod.2)           Mar.210         (Mod.2)         (Mod.2)           Mar.210         (Mod.2)         (Mod.2)           Mar.2110         (Mod.2)         (Mod.2)           Mar.2111         (Mod.2)         (Mod.2)           Mar.2111         (Mod.2)         (Mod.2)           Mar.2111         (Mod.2)         (Mod.2)           Mar.2112         (Mod.2)         (Mod.2)           Mar.2113         (Mod.2)         (Mod.2)           Mar.2114         (1234)         (1234)           Mar.2115         (Mod.2)         (Mod.2)           Mar.2111         (Mod.2)         (Mod.2)           Mar.2112         (Mod.2)         (Mod.2)           Mar.2113         (Mod.2)         (Mod.2)           Mar.2121         (Mod.2)         (Mod.2)           Mar.2123         (Mod.2)         (Mod.2)           Mar.2131         (Mod.2)         (Mod.2)           Mar.2131         (Mod.2)</th><th><math display="block">\begin{array}{cccc} 200 &amp; (c) \\ 200 &amp; (c) \\ 288 &amp; (c) \\ 0624 &amp; (c) \\ 945 &amp; (c) \\ 945 &amp; (c) \\ 2355 &amp; (c) \\ 2411 &amp; (c) \\ 2355 &amp; (c) \\ 2355 &amp; (c) \\ 2358 &amp; (c) \\ 2358 &amp; (c) \\ 2358 &amp; (c) \\ 2358 &amp; (c) \\ 1914 &amp; (c) \\ 1914 &amp; (c) \\ 2358 &amp; (c) \\ 1914 &amp; (c) \\ 1914 &amp; (c) \\ 2358 &amp; (c) \\ 1915 &amp; (c) \\ 1914 &amp; (c) \\ </math></th><th>99.69<br/>99.69<br/>99.74<br/>99.74<br/>99.61<br/>99.63<br/>99.68<br/>99.95<br/>99.95<br/>99.57<br/>100<br/>99.93<br/>100<br/>99.93<br/>100<br/>99.95<br/>100<br/>99.95<br/>100<br/>99.95<br/>100<br/>99.94<br/>51<br/>99.65<br/>99.65<br/>99.65<br/>99.65<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>10</th><th>Nath         Nath           Nath         Nath           Nath<th>04458 005126 00759 00759
00759 00759</th><th><math display="block">\begin{array}{c ccccccccccccccccccccccccccccccccccc</math></th><th>(c)         (d)           (d)         (d)           (d)</th><th>99,692<br/>99,748<br/>96,135<br/>99,643<br/>99,643<br/>99,643<br/>99,643<br/>99,643<br/>99,643<br/>99,9379<br/>99,375<br/>99,375<br/>99,375<br/>99,375<br/>99,375<br/>99,375<br/>99,572<br/>99,572<br/>99,572<br/>99,572<br/>99,572<br/>99,572<br/>99,572<br/>99,572<br/>99,572<br/>99,572<br/>99,572<br/>99,572<br/>99,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>9</th><th>Balanci José         Balanci José         Piros           Balanci José         Piros         Piros</th><th>(i)         (i)           (i)         (i)           (ii)         (iii)           (iii)         (iiii)           (iii)         (iiii)           (iii)         (iiii)           (iii)         (iiii)           (iiii)         (iiii)           (iiii)         (iiii)</th><th>100         99385           991385         994385           991385         99621           99139         99544           99139         99315           99319         99315           99319         99315           99319         99319           99319         99319           99319         99319           99319         99319           99319         99319           99319         99319           99319         99319           99310         100           99310         100           99462         99463           99463         100           984607         100           984607         100           984200         100           99462         100           99462         100           99462         100           99463         100           99462         100           99462         100           99462         100           99463         100           99463         100           99463         100           99463         100</th><th>Section 2017 Section 2017
Secti</th><th>102147<br/>103318<br/>104296<br/>106809<br/>107490<br/>107490<br/>108472<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>11448<br/>114808<br/>11448<br/>113802<br/>11448<br/>113802<br/>11448<br/>113802<br/>11448<br/>113802<br/>11448<br/>113802<br/>11448<br/>113802<br/>125348<br/>11302<br/>120455<br/>120459<br/>122956<br/>130895<br/>132855<br/>138875<br/>138855<br/>138855<br/>138855<br/>138855<br/>138855<br/>1387856<br/>1399217</th><th>104295<br/>106683<br/>107489<br/>107489<br/>108434<br/>117489<br/>111488<br/>112594<br/>113284<br/>113284<br/>113539<br/>115539<br/>117593<br/>117593<br/>117593<br/>117593<br/>118982<br/>119665<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>120045<br/>120045<br/>120045<br/>120045<br/>120045<br/>120045<br/>120045<br/>12</th><th>978<br/>978<br/>2388<br/>621<br/>945<br/>441<br/>714<br/>714<br/>714<br/>714<br/>714<br/>714<br/>714<br/>714<br/>714</th><th></th><th>99.385<br/>99.623<br/>98.544<br/>99.623<br/>98.544<br/>99.852<br/>99.315<br/>99.155<br/>97.706<br/>99.315<br/>99.315<br/>99.315<br/>99.315<br/>99.315<br/>99.317<br/>100<br/>99.317<br/>99.321<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.859<br/>100<br/>99.859<br/>100<br/>99.859<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>90.855<br/>100<br/>90.855<br/>100<br/>90.855<br/>100<br/>90.855<br/>100<br/>90.855<br/>100<br/>90.855<br/>100<br/>90.855<br/>100<br/>90.855<br/>100<br/>90.855<br/>100<br/>90.855<br/>100<br/>90.855<br/>100<br/>90.85</th></th></tr<> | 120         570           120         978           120         978           120         970           120         978           128         984           121         839           137         441           985         2535           294         441           000         714           656         657           045         2538           999         1914           451         486           338         915           999         1914           451         486           417         710           1896         667           991         1914           451         486           453         1935           977         862           109         495           224         1193           957         873           320         867           464         348           322         2682           239         957           109         213           489         273           4  
   
   
   | (c)                             | 38.542           99.385           99.385           99.385           99.385           99.82           99.82           99.52           99.52           99.52           99.52           99.52           99.52           99.52           99.52           99.52           99.52           99.52           99.52           99.52           99.52           99.52           99.53           90.54           99.55           99.54           99.55           99.55           99.55           99  | Mar.210         (Mod.2)         (Mod.2)           Mar.210         (Mod.2)         (Mod.2)           Mar.210         (Mod.2)         (Mod.2)           Mar.2110         (Mod.2)         (Mod.2)           Mar.2111         (Mod.2)         (Mod.2)           Mar.2111         (Mod.2)         (Mod.2)           Mar.2111         (Mod.2)         (Mod.2)           Mar.2112         (Mod.2)         (Mod.2)           Mar.2113         (Mod.2)         (Mod.2)           Mar.2114         (1234)         (1234)           Mar.2115         (Mod.2)         (Mod.2)           Mar.2111         (Mod.2)         (Mod.2)           Mar.2112         (Mod.2)         (Mod.2)           Mar.2113         (Mod.2)         (Mod.2)           Mar.2121         (Mod.2)         (Mod.2)           Mar.2123         (Mod.2)         (Mod.2)           Mar.2131         (Mod.2)         (Mod.2)           Mar.2131         (Mod.2)   
   
   
  | $\begin{array}{cccc} 200 & (c) \\ 200 & (c) \\ 288 & (c) \\ 0624 & (c) \\ 945 & (c) \\ 945 & (c) \\ 2355 & (c) \\ 2411 & (c) \\ 2355 & (c) \\ 2355 & (c) \\ 2358 & (c) \\ 2358 & (c) \\ 2358 & (c) \\ 2358 & (c) \\ 1914 & (c) \\ 1914 & (c) \\ 2358 & (c) \\ 1914 & (c) \\ 1914 & (c) \\ 2358 & (c) \\ 1915 & (c) \\ 1914 & (c) \\ $   | 99.69<br>99.69<br>99.74<br>99.74<br>99.61<br>99.63<br>99.68<br>99.95<br>99.95<br>99.57<br>100<br>99.93<br>100<br>99.93<br>100<br>99.95<br>100<br>99.95<br>100<br>99.95<br>100<br>99.94<br>51<br>99.65<br>99.65<br>99.65<br>99.65<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>10  | Nath         Nath           Nath <th>04458 005126 00759</th> <th><math display="block">\begin{array}{c ccccccccccccccccccccccccccccccccccc</math></th> <th>(c)         (d)           (d)         (d)           (d)</th>
<th>99,692<br/>99,748<br/>96,135<br/>99,643<br/>99,643<br/>99,643<br/>99,643<br/>99,643<br/>99,643<br/>99,9379<br/>99,375<br/>99,375<br/>99,375<br/>99,375<br/>99,375<br/>99,375<br/>99,572<br/>99,572<br/>99,572<br/>99,572<br/>99,572<br/>99,572<br/>99,572<br/>99,572<br/>99,572<br/>99,572<br/>99,572<br/>99,572<br/>99,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>90,572<br/>9</th> <th>Balanci José         Balanci José         Piros           Balanci José         Piros         Piros</th> <th>(i)         (i)           (i)         (i)           (ii)         (iii)           (iii)         (iiii)           (iii)         (iiii)           (iii)         (iiii)           (iii)         (iiii)           (iiii)         (iiii)           (iiii)         (iiii)</th> <th>100         99385           991385         994385           991385         99621           99139         99544           99139         99315           99319         99315           99319         99315           99319         99319           99319         99319           99319         99319           99319         99319           99319         99319           99319         99319           99319         99319           99310         100           99310         100           99462         99463           99463         100           984607         100           984607         100           984200         100           99462         100           99462         100           99462         100           99463         100           99462         100           99462         100           99462         100           99463         100           99463         100           99463         100           99463         100</th> <th>Section 2017 Section 2017 Secti</th> <th>102147<br/>103318<br/>104296<br/>106809<br/>107490<br/>107490<br/>108472<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>108955<br/>11448<br/>114808<br/>11448<br/>113802<br/>11448<br/>113802<br/>11448<br/>113802<br/>11448<br/>113802<br/>11448<br/>113802<br/>11448<br/>113802<br/>125348<br/>11302<br/>120455<br/>120459<br/>122956<br/>130895<br/>132855<br/>138875<br/>138855<br/>138855<br/>138855<br/>138855<br/>138855<br/>1387856<br/>1399217</th> <th>104295<br/>106683<br/>107489<br/>107489<br/>108434<br/>117489<br/>111488<br/>112594<br/>113284<br/>113284<br/>113539<br/>115539<br/>117593<br/>117593<br/>117593<br/>117593<br/>118982<br/>119665<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>122045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>123045<br/>120045<br/>120045<br/>120045<br/>120045<br/>120045<br/>120045<br/>120045<br/>12</th> <th>978<br/>978<br/>2388<br/>621<br/>945<br/>441<br/>714<br/>714<br/>714<br/>714<br/>714<br/>714<br/>714<br/>714<br/>714</th> <th></th>
<th>99.385<br/>99.623<br/>98.544<br/>99.623<br/>98.544<br/>99.852<br/>99.315<br/>99.155<br/>97.706<br/>99.315<br/>99.315<br/>99.315<br/>99.315<br/>99.315<br/>99.317<br/>100<br/>99.317<br/>99.321<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.849<br/>100<br/>99.859<br/>100<br/>99.859<br/>100<br/>99.859<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.853<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>99.855<br/>100<br/>90.855<br/>100<br/>90.855<br/>100<br/>90.855<br/>100<br/>90.855<br/>100<br/>90.855<br/>100<br/>90.855<br/>100<br/>90.855<br/>100<br/>90.855<br/>100<br/>90.855<br/>100<br/>90.855<br/>100<br/>90.855<br/>100<br/>90.85</th>   | 04458 005126 00759  | $\begin{array}{c ccccccccccccccccccccccccccccccccccc$  | (c)         (d)           (d)         (d)           (d) |
99,692<br>99,748<br>96,135<br>99,643<br>99,643<br>99,643<br>99,643<br>99,643<br>99,643<br>99,9379<br>99,375<br>99,375<br>99,375<br>99,375<br>99,375<br>99,375<br>99,572<br>99,572<br>99,572<br>99,572<br>99,572<br>99,572<br>99,572<br>99,572<br>99,572<br>99,572<br>99,572<br>99,572<br>99,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>90,572<br>9  | Balanci José         Balanci José         Piros           Balanci José         Piros         Piros   
  | (i)         (i)           (i)         (i)           (ii)         (iii)           (iii)         (iiii)           (iii)         (iiii)           (iii)         (iiii)           (iii)         (iiii)           (iiii)         (iiii)           (iiii)         (iiii)   
   | 100         99385           991385         994385           991385         99621           99139         99544           99139         99315           99319         99315           99319         99315           99319         99319           99319         99319           99319         99319           99319         99319           99319         99319           99319         99319           99319         99319           99310         100           99310         100           99462         99463           99463         100           984607         100           984607         100           984200         100           99462         100           99462         100           99462         100           99463         100           99462         100           99462         100           99462         100           99463         100           99463         100           99463         100           99463         100   
  | Section 2017 Secti  | 102147<br>103318<br>104296<br>106809<br>107490<br>107490<br>108472<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>108955<br>11448<br>114808<br>11448<br>113802<br>11448<br>113802<br>11448<br>113802<br>11448<br>113802<br>11448<br>113802<br>11448<br>113802<br>125348<br>11302<br>120455<br>120459<br>122956<br>130895<br>132855<br>138875<br>138855<br>138855<br>138855<br>138855<br>138855<br>1387856<br>1399217   
   | 104295<br>106683<br>107489<br>107489<br>108434<br>117489<br>111488<br>112594<br>113284<br>113284<br>113539<br>115539<br>117593<br>117593<br>117593<br>117593<br>118982<br>119665<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>122045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>123045<br>120045<br>120045<br>120045<br>120045<br>120045<br>120045<br>120045<br>12   | 978<br>978<br>2388<br>621<br>945<br>441<br>714<br>714<br>714<br>714<br>714<br>714<br>714<br>714<br>714   |  |
99.385<br>99.623<br>98.544<br>99.623<br>98.544<br>99.852<br>99.315<br>99.155<br>97.706<br>99.315<br>99.315<br>99.315<br>99.315<br>99.315<br>99.317<br>100<br>99.317<br>99.321<br>100<br>99.842<br>100<br>99.842<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.849<br>100<br>99.859<br>100<br>99.859<br>100<br>99.859<br>100<br>99.853<br>100<br>99.853<br>100<br>99.853<br>100<br>99.853<br>100<br>99.853<br>100<br>99.853<br>100<br>99.853<br>100<br>99.853<br>100<br>99.853<br>100<br>99.853<br>100<br>99.853<br>100<br>99.853<br>100<br>99.853<br>100<br>99.853<br>100<br>99.853<br>100<br>99.853<br>100<br>99.853<br>100<br>99.853<br>100<br>99.853<br>100<br>99.853<br>100<br>99.853<br>100<br>99.853<br>100<br>99.853<br>100<br>99.853<br>100<br>99.853<br>100<br>99.853<br>100<br>99.853<br>100<br>99.853<br>100<br>99.853<br>100<br>99.853<br>100<br>99.853<br>100<br>99.853<br>100<br>99.853<br>100<br>99.853<br>100<br>99.853<br>100<br>99.853<br>100<br>99.853<br>100<br>99.853<br>100<br>99.853<br>100<br>99.853<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>99.855<br>100<br>90.855<br>100<br>90.855<br>100<br>90.855<br>100<br>90.855<br>100<br>90.855<br>100<br>90.855<br>100<br>90.855<br>100<br>90.855<br>100<br>90.855<br>100<br>90.855<br>100<br>90.855<br>100<br>90.85 |
| IMV kepath binding surface prote in (Cop-HSL) EATP4 RNA pail assocs protein (Cop-HSL) EATP4 RNA pail assocs protein (Cop-HSL) DNA toposisomerase type 1 (Cop-HSR) (Cop-HSL) (Cop   | IEIL           H4L           H4R           H5R           H6R           D1R           D2L           D3R           D4R           D5R           D6R           D7R           D1R           D1R           D1R           D1R           D1R           D1B           D6R           D6R           D1R           D1B           D1D           D11L           D11L           O11L           A1L           A21L           A21L           A31L           A34L           A5R           A9L           A10L           A112L           A131           A144.5L           A145.1  | CIAVIIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>CIAVIE<br>C   | NoF-108         1037-10           NoF-108         103723           NoF-108         103723           NoF-108         103723           NoF-108         103723           NoF-110         103723           NoF-111         107574           NoF-111         107574           NoF-111         107574           NoF-111         107574           NoF-111         107585           NoF-114         115540           NoF-114         115540           NoF-114         115540           NoF-114         115540           NoF-114         115540           NoF-114         115540           NoF-114         115606           NoF-121         115606           NoF-122         115474           NoF-123         115474           NoF-124         125470           NoF-122         125312           NoF-122         125312           NoF-123         12646           NoF-124         12646           NoF-125         12646           NoF-123         12646           NoF-133         12845           NoF-133         12845   
   
   
   | 120         570           120         978           120         978           120         970           120         978           120         978           120         978           121         441           205         2235           204         441           205         224           4000         714           456         657           203         626           203         1656           707         453           403         945           203         1656           769         453           464         675           464         675           464         675           464         193           300         867           300         867           300         867           464         313           300         867           300         867           300         867           453         244           453         244           453         244           453 <th>(c)           (c)           (c)</th> <th>33.84         99.33           99.33         99.33           99.34         99.36           99.52         99.52           99.32         99.25           99.33         99.26           99.34         100           99.156         100           99.157         100           99.194         99.537           100         99.194           99.59         99.194           99.62         99.57           99.194         99.461           99.62         99.621           99.62         99.611           100         99.622           99.621         90.621           99.622         99.184           99.623         99.637           100         99.642           99.653         100           99.653         100           99.653         100           99.653         100           99.653         100           99.653         100           99.653         100           99.653         100           99.754         100           99.754         100           99.754</th> <th>Mar 210         (Moz 340)           Mar 210         (Moz 340)           Mar 210         (Moz 340)           Mar 210         (Moz 340)           Mar 2110         (MS7)           Mar 2110         (MS7)           Mar 2111         (MS6)           Mar 2111         (MS6)           Mar 2111         (MS6)           Mar 2111         (MS6)           Mar 2121         (MS6)           Mar 2121         (MS6)           Mar 2121         (MS70)           Mar 2121         (MS70)</th> <th><math display="block">\begin{array}{cccccccccccccccccccccccccccccccccccc</math></th> <th>99.69<br/>99.69<br/>99.74<br/>96.13<br/>99.58<br/>99.68<br/>99.58<br/>99.58<br/>99.57<br/>100<br/>99.57<br/>100<br/>99.57<br/>100<br/>99.57<br/>100<br/>99.57<br/>100<br/>99.57<br/>100<br/>99.57<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>100<br/>100<br/>100<br/>100<br/>99.57<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>99.55<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>1</th> <th>Nath.100           Nath.201           Nath.108           Nath.108           Nath.108           Nath.108           Nath.108           Nath.108           Nath.108           Nath.101           Nath.101           Nath.111           Nath.112           Nath.112           Nath.112           Nath.121           Nath.122           Nath.123           Nath.133           Nath.134           Nath.135           Nath.139           Nath.139           Nath.139           Nath.139           Nath.141</th> <th>04438 00513 00770 00303 00770 00303 00770 00303 00770 00303 00770 00303 00770 00303 00770 00303 00770 00303 00770 00303 00770 00303 00770 00300 00300 00300000 0030000 00300 00300 00300 00300 00300 00300 003000000</th> <th><math display="block">\begin{array}{c c c c c c c c c c c c c c c c c c c </math></th> <th>(c)         (d)           (d)         (d)           (d)</th>
<th>99,692<br/>99,748<br/>96,133<br/>99,643<br/>99,643<br/>99,643<br/>99,643<br/>99,643<br/>99,643<br/>99,945<br/>99,315<br/>99,579<br/>99,579<br/>99,652<br/>99,652<br/>99,657<br/>100<br/>99,945<br/>100<br/>99,652<br/>99,657<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,577<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,577<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>99,578<br/>100<br/>90,578<br/>100<br/>90,578<br/>100<br/>90,578<br/>100<br/>90,578<br/>100<br/>90,578<br/>100<br/>90,578<br/>100<br/>90,578<br/>100<br/>90,578<br/>100<br/>90,578<br/>100<br/>90,578<br/>100<br/>90,578<br/>100<br/>90,578<br/>100<br/>90,578<br/>100<br/>90,578<br/>100<br/>90,578<br/>100<br/>90,578<br/>100,578<br/>100<br/>100,578<br/>100,578<br/>100,578</th> <th>weith-160         013-02         013-02         013-02           weith-160         013-02         042-02         040-02         013-02         021           weith-160         013-02         021</th> <th>0         0           0         0</th> <th>100         99385           992385         99623           99623         99624           97945         99682           97945         99682           97945         99682           99235         99136           99236         993939           99319         99319           99319         99319           99319         99319           99319         99319           100         99342           100         99542           99542         100           99511         100           995110         100           995110         100           995110         100           995110         100           995110         100           995110         100           995110         100           995110         100           995110         100           995110         100           995110         100           995110         100           995110         100           995110         100           995110         100           995110         100<th>Swith: 00         Swith: 00           Swith: 00         Swith: 00           Swith: 01         Swith: 01           Swith: 01         Swith: 02           Swith: 02         Swith: 02           Swith: 03         Swith: 03           Swith: 04         Swith: 02           Swith: 04         Swith: 02           Swith: 03         Swith: 03           Swith: 04         Swith: 04           Swith: 04         Swith:
04</th><th>102147<br/>103318<br/>104296<br/>106869<br/>107490<br/>107490<br/>108955<br/>111448<br/>11381<br/>112594<br/>113282<br/>11580<br/>111052<br/>1110602<br/>1108955<br/>111448<br/>113282<br/>115806<br/>119024<br/>119602<br/>120409<br/>1125384<br/>119602<br/>129409<br/>12955<br/>126809<br/>12965<br/>123884<br/>123655<br/>123820<br/>129176<br/>123689<br/>133895<br/>133884<br/>133865<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1348455<br/>1348455<br/>1348455<br/>1348455<br/>1348455<br/>1348455<br/>1348455<br/>1348455<br/>1348455<br/>1348455<br/>1348455<br/>1348455<br/>1348455<br/>1348455<br/>1348455<br/>1348455<br/>1348455<br/>13484555<br/>13484555<br/>1348455555555555555555555555555555555555</th><th>104295<br/>104295<br/>106683<br/>107489<br/>108434<br/>111489<br/>111488<br/>111559<br/>111559<br/>117593<br/>111509<br/>117593<br/>111805<br/>115639<br/>117593<br/>111805<br/>12204<br/>12304<br/>12304<br/>12304<br/>12304<br/>12304<br/>12304<br/>12304<br/>12305<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12</th><th>378           978           2388           621           945           441           2535           441           747           2358           1914           4864           642           747           1896           642           743           1896           405           231           1938           405           2133           2682           2737           162           231           119           348           2682           273           162           285           273           162           285           282           283           284           285           287           288           288           288           288           288           288           288           288           288           288</th><th></th><th>99.385<br/>99.623<br/>99.624<br/>99.682<br/>99.682<br/>99.854<br/>99.854<br/>99.289<br/>99.156<br/>99.289<br/>99.156<br/>99.285<br/>99.156<br/>99.285<br/>99.156<br/>99.2766<br/>99.2766<br/>99.2766<br/>99.2766<br/>99.2766<br/>99.2766<br/>99.2766<br/>99.2766<br/>99.2766<br/>99.2766<br/>99.2718<br/>99.842<br/>100<br/>100<br/>100<br/>99.819<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>10</th></th> | (c)           (c) | 33.84         99.33           99.33         99.33           99.34         99.36           99.52         99.52           99.32         99.25
          99.33         99.26           99.34         100           99.156         100           99.157         100           99.194         99.537           100         99.194           99.59         99.194           99.62         99.57           99.194         99.461           99.62         99.621           99.62         99.611           100         99.622           99.621         90.621           99.622         99.184           99.623         99.637           100         99.642           99.653         100           99.653         100           99.653         100           99.653         100           99.653         100           99.653         100           99.653         100           99.653         100           99.754         100           99.754         100           99.754   | Mar 210         (Moz 340)           Mar 210         (Moz 340)           Mar 210         (Moz 340)           Mar 210         (Moz 340)           Mar 2110         (MS7)           Mar 2110         (MS7)           Mar 2111         (MS6)           Mar 2111         (MS6)           Mar 2111         (MS6)           Mar 2111         (MS6)           Mar 2121         (MS6)           Mar 2121         (MS6)           Mar 2121         (MS70)   
   
   | $\begin{array}{cccccccccccccccccccccccccccccccccccc$  
   | 99.69<br>99.69<br>99.74<br>96.13<br>99.58<br>99.68<br>99.58<br>99.58<br>99.57<br>100<br>99.57<br>100<br>99.57<br>100<br>99.57<br>100<br>99.57<br>100<br>99.57<br>100<br>99.57<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>100<br>100<br>100<br>100<br>99.57<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>99.55<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>1  | Nath.100           Nath.201           Nath.108           Nath.108           Nath.108           Nath.108           Nath.108           Nath.108           Nath.108           Nath.101           Nath.101           Nath.111           Nath.112           Nath.112           Nath.112           Nath.121           Nath.122           Nath.123           Nath.133           Nath.134           Nath.135           Nath.139           Nath.139           Nath.139           Nath.139           Nath.141  
   
   | 04438 00513 00770 00303 00770 00303 00770 00303 00770 00303 00770 00303 00770 00303 00770 00303 00770 00303 00770 00303 00770 00303 00770 00300 00300 00300000 0030000 00300 00300 00300 00300 00300 00300 003000000  | $\begin{array}{c c c c c c c c c c c c c c c c c c c $   | (c)         (d)           (d)         (d)           (d) |
99,692<br>99,748<br>96,133<br>99,643<br>99,643<br>99,643<br>99,643<br>99,643<br>99,643<br>99,945<br>99,315<br>99,579<br>99,579<br>99,652<br>99,652<br>99,657<br>100<br>99,945<br>100<br>99,652<br>99,657<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,577<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,577<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>99,578<br>100<br>90,578<br>100<br>90,578<br>100<br>90,578<br>100<br>90,578<br>100<br>90,578<br>100<br>90,578<br>100<br>90,578<br>100<br>90,578<br>100<br>90,578<br>100<br>90,578<br>100<br>90,578<br>100<br>90,578<br>100<br>90,578<br>100<br>90,578<br>100<br>90,578<br>100<br>90,578<br>100,578<br>100<br>100,578<br>100,578<br>100,578 | weith-160         013-02         013-02         013-02           weith-160         013-02         042-02         040-02         013-02         021           weith-160         013-02         021  
   | 0         0             
  | 100         99385           992385         99623           99623         99624           97945         99682           97945         99682           97945         99682           99235         99136           99236         993939           99319         99319           99319         99319           99319         99319           99319         99319           100         99342           100         99542           99542         100           99511         100           995110         100           995110         100           995110         100           995110         100           995110         100           995110         100           995110         100           995110         100           995110         100           995110         100           995110         100           995110         100           995110         100           995110         100           995110         100           995110         100 <th>Swith: 00         Swith: 00           Swith: 00         Swith: 00           Swith: 01         Swith: 01           Swith: 01         Swith: 02           Swith: 02         Swith: 02           Swith: 03         Swith: 03           Swith: 04         Swith: 02           Swith: 04         Swith: 02           Swith: 03         Swith: 03           Swith: 04         Swith: 04           Swith: 04         Swith: 04</th>
<th>102147<br/>103318<br/>104296<br/>106869<br/>107490<br/>107490<br/>108955<br/>111448<br/>11381<br/>112594<br/>113282<br/>11580<br/>111052<br/>1110602<br/>1108955<br/>111448<br/>113282<br/>115806<br/>119024<br/>119602<br/>120409<br/>1125384<br/>119602<br/>129409<br/>12955<br/>126809<br/>12965<br/>123884<br/>123655<br/>123820<br/>129176<br/>123689<br/>133895<br/>133884<br/>133865<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1338455<br/>1348455<br/>1348455<br/>1348455<br/>1348455<br/>1348455<br/>1348455<br/>1348455<br/>1348455<br/>1348455<br/>1348455<br/>1348455<br/>1348455<br/>1348455<br/>1348455<br/>1348455<br/>1348455<br/>1348455<br/>13484555<br/>13484555<br/>1348455555555555555555555555555555555555</th> <th>104295<br/>104295<br/>106683<br/>107489<br/>108434<br/>111489<br/>111488<br/>111559<br/>111559<br/>117593<br/>111509<br/>117593<br/>111805<br/>115639<br/>117593<br/>111805<br/>12204<br/>12304<br/>12304<br/>12304<br/>12304<br/>12304<br/>12304<br/>12304<br/>12305<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12665<br/>12</th> <th>378           978           2388           621           945           441           2535           441           747           2358           1914           4864           642           747           1896           642           743           1896           405           231           1938           405           2133           2682           2737           162           231           119           348           2682           273           162           285           273           162           285           282           283           284           285           287           288           288           288           288           288           288           288           288           288           288</th> <th></th> <th>99.385<br/>99.623<br/>99.624<br/>99.682<br/>99.682<br/>99.854<br/>99.854<br/>99.289<br/>99.156<br/>99.289<br/>99.156<br/>99.285<br/>99.156<br/>99.285<br/>99.156<br/>99.2766<br/>99.2766<br/>99.2766<br/>99.2766<br/>99.2766<br/>99.2766<br/>99.2766<br/>99.2766<br/>99.2766<br/>99.2766<br/>99.2718<br/>99.842<br/>100<br/>100<br/>100<br/>99.819<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.842<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>99.858<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>10</th> | Swith: 00         Swith: 00           Swith: 00         Swith: 00           Swith: 01         Swith: 01           Swith: 01         Swith: 02           Swith: 02      
  Swith: 02           Swith: 03         Swith: 03           Swith: 04         Swith: 02           Swith: 04         Swith: 02           Swith: 03         Swith: 03           Swith: 04         Swith: 04   | 102147<br>103318<br>104296<br>106869<br>107490<br>107490<br>108955<br>111448<br>11381<br>112594<br>113282<br>11580<br>111052<br>1110602<br>1108955<br>111448<br>113282<br>115806<br>119024<br>119602<br>120409<br>1125384<br>119602<br>129409<br>12955<br>126809<br>12965<br>123884<br>123655<br>123820<br>129176<br>123689<br>133895<br>133884<br>133865<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1338455<br>1348455<br>1348455<br>1348455<br>1348455<br>1348455<br>1348455<br>1348455<br>1348455<br>1348455<br>1348455<br>1348455<br>1348455<br>1348455<br>1348455<br>1348455<br>1348455<br>1348455<br>13484555<br>13484555<br>1348455555555555555555555555555555555555   | 104295<br>104295<br>106683<br>107489<br>108434<br>111489<br>111488<br>111559<br>111559<br>117593<br>111509<br>117593<br>111805<br>115639<br>117593<br>111805<br>12204<br>12304<br>12304<br>12304<br>12304<br>12304<br>12304<br>12304<br>12305<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12665<br>12 | 378           978           2388           621           945           441           2535           441           747           2358           1914           4864           642           747           1896           642           743           1896           405           231           1938           405           2133           2682           2737           162           231           119           348           2682           273           162           285           273           162           285           282           283           284           285           287           288           288           288           288           288           288           288           288           288           288  
   |  | 99.385<br>99.623<br>99.624<br>99.682<br>99.682<br>99.854<br>99.854<br>99.289<br>99.156<br>99.289<br>99.156<br>99.285<br>99.156<br>99.285<br>99.156<br>99.2766<br>99.2766<br>99.2766<br>99.2766<br>99.2766<br>99.2766<br>99.2766<br>99.2766<br>99.2766<br>99.2766<br>99.2718<br>99.842<br>100<br>100<br>100<br>99.819<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.842<br>100<br>99.858<br>100<br>99.858<br>100<br>99.858<br>100<br>99.858<br>100<br>99.858<br>100<br>99.858<br>100<br>99.858<br>100<br>99.858<br>100<br>99.858<br>100<br>99.858<br>100<br>99.858<br>100<br>99.858<br>100<br>99.858<br>100<br>99.858<br>100<br>99.858<br>100<br>99.858<br>100<br>99.858<br>100<br>99.858<br>100<br>99.858<br>100<br>99.858<br>100<br>99.858<br>100<br>99.858<br>100<br>99.858<br>100<br>99.858<br>100<br>99.858<br>100<br>99.858<br>100<br>99.858<br>100<br>99.858<br>100<br>99.858<br>100<br>99.858<br>100<br>99.858<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>10  |

|  |  | CDVUIEI  | N. E1 14  
   | 141/04 1421/2  | 1.400  | (1)   | 07.7(0  | N. F2 147 142200 14270  
   
   
   | 1493   | (.)  | 00.222  
   
  |  
   
   | 24 142/18 1402  | (1)   
  | 00.227   
   |               
  | 1170 (  | .) 00.67   | C   
  | 144 14124  
  | 4 142222  | 1.470  
  | (1)   | 00 727   |
|--|--|--
---|--|--|---
---
--
--
---|--|--
--
--
--
--
--|---|--
--
--
--|---|--
--
--
---|---|---|---
--|
| DAA nencase, maiscript refease factor (CopA1 8K)   | AI8K   | CPXVI51  | NoF1-14   
   | 141684 143165  | 1482   | (+)   | 97.769  | NoF2-145 142200 14368   
   
   
   | 1482   | (+)  | 98_377 No   
   
  | oHI-144 1421   
   
   | 34 143615 1482  | (+)   
  | 98.377   
   | weH1-144
1413/8 14285  | 6 14/9 (+   | +) 98.5  | SweH2   
  | -144 14124   
  | 4 142722  | 14/9   
  | (+)   | 98.577   |
| Zinc finger-like protein (Cop-A19L)  | A19L   | CPXV152  | NoF1-14   
   | 5 143146 143379  | 234  | (-)   | 100   | NoF2-146 143662 14389   
   
   
   | 234  | (-)  | 98.701 No   
   
  | oH1-145 1435   
   
   | 96 143829 234   | (-)   
  | 98.701   
   | weH1-145
142837 14307  | 0 234 (-  | -) 100   | SweH2   
  | -145 14270   
  | 3 142936  | 234  
  | (-)   | 100  |
| IMV membrane protein, entry/fusion complex comp onent (Cop-A21L)   | A21L   | CPXV153  | NoF1-14   
   | 7 143380 143733  | 354  | (-)   | 100   | NoF2-147 143896 14424   
   
   
   | 354  | (•)  | 100 No  
   
  | oH1-146 1438   
   
   | 30 144183 354   | (-)   
  | 100 \$   
   | weH1-146
143071 14342  | 4 354 (-  | -) 100   | SweH2   
  | -146 14293   
  | 7 143290  | 354  
  | (-)   | 100  |
| DNA polymerase processivity factor (Cop-A20R)  | A20R   | CPXV154  | NoF1-14   
   | 8 143732 145012  | 1281   | (+)   | 99.296  | NoF2-148 144248 14552   
   
   
   | 1281   | (+)  | 99.061 No   
   
  | oH1-147 1441   
   
   | 82 145462 1281  | (+)   
  | 99.061   
   | weH1-147
143423 14470  | 3 1281 (+   | +) 99.76   | 5 SweH2   
  | -147 14328   
  | 9 144569  | 1281   
  | (+)   | 99.765   |
| Holliday junction resolvase (Cop-A22R)   | A22R   | CPXV155  | NoF1-14   
   | 9 144942 145505  | 564  | (+)   | 100   | NoF2-149 145458 14602   
   
   
   | 564  | (+)  | 100 No  
   
  | oH1-148 1453   
   
   | 92 145955 564   | (+)   
  | 100 \$   
   | weH1-148
144633 14519  | 6 564 (+  | +) 100   | SweH2   
  | -148 14449   
  | 9 145062  | 564  
  | (+)   | 100  |
| VITF-3 45kda subunit (Cop-A23R)  | A23R   | CPXV156  | NoF1-15   
   | 145525 146673  | 1149   | (+)   | 99.738  | NoF2-150 146041 14718   
   
   
   | 1149   | (+)  | 99.738 No   
   
  | oH1-149 1459   
   
   | 75 147123 1149  | (+)   
  | 99.738   
   | weH1-149
145216 14636  | 4 1149 (+   | +) 99.73   | 8 SweH2   
  | -149 14508   
  | 2 146230  | 1149   
  | (+)   | 99.738   |
| RNA polymerase subunit (RPO132) (Con-A24R)   | A24R   | rpo132/CPXV157   | NoF1-15   
   | 146670 150164  | 3495   | (+)   | 99,742  | NoF2-151 147186 15068   
   
   
   | 3495   | (+)  | 99.828 No   
   
  | oH1-150 1471   
   
   | 20 150614 3495  | (+)   
  | 99.828   
   | weH1-150
146361 14985  | 5 3495 (+   | +) 99.91   | 4 SweH2   
  | -150 14622   
  | 7 149721  | 3495   
  | (+)   | 99.914   |
| A-type inclusion protein (Cop-A25L)  | A25L   | CPXV158  | NoF1-15   
   | 2 150142 153918  | 3777   | (-)   | 94,319  | NoF2-152 150658 15443   
   
   
   | 3777   | (-)  | 94.397 No   
   
  | oH1-151 1505   
   
   | 92 154368 3777  | (-)   
  | 94,397   
   | weH1-151
149833 15363  | 1 3789 (-   | -) 94.8  | 8 SweH2   
  | -151 14969   
  | 9 153487  | 3789   
  | (-)   | 94.88  | | |
| Unknown (CPV.R.160)  |  | CPXV160  |   
   |  |  | 0   |   |   
   
   
   |  | 0  |   
   
  |  
   
   | overba  |   
  |  
   |               
  |   |  |   
  |  
  |   |  
  | 0   |  |
| Ple nmensor (Con. A261)  | A26I   | CPXV161  | NoE1 15   
   | 152064 155522  | 1560   | 0   | 97.255  | NoF2 153 154480 15603   
   
   
   | 1554   | ()   | 07.255 No   
   
  | JUL 152 1544   
   
   | 14 155085 1572  | 0   
  | 07.255   
   | wall1 152
153666 15529   | 5 1590 (  | 08.03  | Small?   
   | 152 15353   
   | 2 155121  | 1590  
   | ()  | 08.030   |
| DIV and a metale for a state (Con 1271)  | 1001   | CDWUICA  | NoT 1-13.   
   | 155504 155552  | 2222   | (-)   | 100   | N-F2 154 15(005 15(4))  
   
   
   | 222  | (*)  | 100 No  
   
  | 111 162 16(0   
   
   | 27 18(2(0) 222  | (-)   
  | 100 0  
   |               
  | 222 (   | -) )0.0.   | 0) Swell2   
  | 102 10000  
  | 2 100121  | 1370   
  | (-)   | 100  |
| INI V surface protein, iusion protein (Cop-A27L)   | A2/L   | CFAV162  | NOP1-15   
   | 10004 100910   | 333  | (-)   | 100   | N0F2-154 150085 15041   
   
   
   | 333  | (-)  | 100 No  
   
  | 0H1-155 1500   
   
   | 37 130309 333   | (-)   
  | 100 2  
   | weH1-155
155507 15563  | 9 333 (-  | -) 100   | Swen2   
  | -155 15517   
  | 3 155505  | 333  
  | (-)   | 100  |
| IMV MP[virus entry (Cop-A28L)  | A28L   | CPXV163  | N0P1-15   
   | 15591/156357   | 441  | (-)   | 98.63   | N0F2-155 156418 15685   
   
   
   | 441  | (-)  | 98.63 No  
   
  | oHI-154 1563   
   
   | /0 156810 441   | (-)   
  | 98.63  
   | weH1-154
155640 15608  | ) 441 (-  | -) 98.0  | 5 SweH2   
  | -154 15550   
  | 6 155946  | 441  
  | (-)   | 98.63  |
| RNA polymerase subunit (RPO35) (Cop-A29L)  | A29L   | CPXV164  | NoF1-15   
   | 5 156358 157275  | 918  | (-)   | 99.344  | NoF2-156 156859 15777   
   
   
   | 918  | (•)  | 99.016 No   
   
  | oH1-155 1568   
   
   | 11 157728 918   | (-)   
  | 99.344   
   | weH1-155
156081 15695  | 8 918 (-  | -) 98.36   | 51 SweH2  
  | -155 15594   
  | 7 156864  | 918  
  | (-)   | 98.361   |
| IMV protein (Cop-A30L)   | A30L   | CPXV165  | NoF1-15   
   | 157238 157468  | 231  | (-)   | 98.684  | NoF2-157 157739 15796   
   
   
   | 231  | (-)  | 98.684 No   
   
  | oH1-156 1576   
   
   | 91 157921 231   | (-)   
  | 98.684   
   | weH1-156
156961 15719  | 4 234 (-  | -) 96.10   | )4 SweH2  
  | -156 15682   
  | 7 157060  | 234  
  | (-)   | 96.104   |
| Viral membrane assembly proteins (VMAP) (Cop-A 30.5L)  | A30.5L   | 165.5  | NoF1-15   
   | 8 157501 157629  | 129  | (-)   | 100   | NoF2-158 158002 15813   
   
   
   | 129  | (-)  | 100 No  
   
  | oH1-157 1579   
   
   | 54 158082 129   | (-)   
  | 100 \$   
   | weH1-157
157227 15735  | 5 129 (-  | -) 97.61   | 9 SweH2   
  | -157 15709   
  | 3 157221  | 129  
  | (-)   | 97.619   |
| Hypothetical protein (Cop-A31R)  | A31R   | CPXV166  | NoF1-15   
   | 9 157628 158041  | 414  | (+)   | 97.143  | NoF2-159 158129 15853   
   
   
   | 408  | (+)  | 95.714 No   
   
  | oH1-158 1580   
   
   | 81 158488 408   | (+)   
  | 95.714 \$  
   | weH1-158
157354 15776  | 4 411 (+  | +) 95  | SweH2   
  | -158 15722   
  | 0 157624  | 405  
  | (+)   | 93.617   |
| ATPase[DNA packaging protein (Cop-A32L)  | A32L   | CPXV167  | NoF1-16   
   | 158011 158820  | 810  | (-)   | 99.257  | NoF2-160 158506 15931:  
   
   
   | 810  | (-)  | 99.257 No   
   
  | oH1-159 1584   
   
   | 58 159267 810   | (-)   
  | 99.257 \$  
   | weH1-159
157773 15854  | 3 771 (-  | -) 100   | SweH2   
  | -159 15759   
  | 4 158403  | 810  
  | (-)   | 100  |
| EEV membrane phosphoelycoprotein. C-type lectin-like domain (Con-A33R)   | A33R   | CPXV168  | NoF1-16   
   | 158938 159513  | 576  | (+)   | 95 312  | NoF2-161 159433 16002   
   
   
   | 591  | (+)  | 89.848 No   
   
  | oH1-160 1593   
   
   | 85 159999 615   | (+)   
  | 86 341   
   | weH1-160
158661 15923  | 1 561 (+  | +) 98.39   | 6 SweH2   
  | -160 15852   
  | 1 159081  | 561  
  | (+)   | 98 396   |
| Catyne lectin-like IEV/FEV alyconnotein (Con-A34R)   | A 34R  | CPXV169  | NoF1-16   
   | 159537 160043  | 507  | (+)   | 99.405  | NoF2-162 160047 16055   
   
   
   | 507  | (4)  | 99.405 No   
   
  | H1-161 1600  
   
   | 23 160529 507   | (4)   
  | 99.405   
   | weH1-161
159245 15974  | 1 507 (4  | +) 100   | SweH2   
  | 161 15910  
  | 5 159611  | 507  
  | (+)   | 100  |
| VV.ConA ODF M  |  | CPXV170  | 11011110  
   | 10/00/ 1000/0  | 501  | (1)   | 77.105  | 10012 102 100000 100000   
   
   
   | 507  | (.)  | 777102  
   
  | 101 100  
   
   | owtho   | (9  
  | 77.105   
   | went 101
10/240 10/10  | 507 (1  | 100  | owerne  
  | 101 13910  
  | 0 100011  | 501  
  | (1)   | 100  |
| MIC data H antique manufation in Bilder (Cr. = 125D)   | 1200   | CDWUITI  | N-ELIC  
   | 1/00000 1/00/10  | 621  | (4)   | 100   | N-F2 1/2 1/0500 1/112   
   
   
   | 621  | (4)  | 100 N.  
   
  | 111 1/2 1/05   
   
   | 26 141105 521   | (1)   
  | 100  
   |               
  | 1 (2) ()  | .) 00.42   | ·   
  | 1/2 150/5  
  | 4 1/0104  | 621  
  | ()  | 00.422   |
| MHC class if anogen presentation infiloror (Co p-ASSR)   | AJOK   | UrAVI/I  | NOP1-10.  
   | 5 100089 100019  | 231  | (+)   | 100   | NOP2-103 100399 10112   
   
   
   | 551  | (+)  | 100 No  
   
  | 0H1-102 1005   
   
   | /5 101105 551   | (+)   
  | 100 2  
   | WeH1-102
159/94 1005   | + 551 (+  | +) 99.4  | Swenz   
  | -102 15905   
  | 4 100184  | 231  
  | (+)   | 99.432   |
| IEV transmembrane phosphoprotein (Cop-A36R)  | A36R   | CPXV172  | NoF1-16   
   | 160683 161351  | 669  | (+)   | 98.214  | NoF2-164 161193 16186   
   
   
   | 669  | (+)  | 97.768 No   
   
  | oH1-163 1611   
   
   | 69 161837 669   | (+)   
  | 97.768   
   | weH1-163
160388 16105  | 0 663 (+  | +) 97.76   | 58 SweH2  
  | -163 16024   
  | 8 160910  | 663  
  | (+)   | 97.768   |
| Hypothetical protein (Cop-A37R)  | A37R   | CPXV173  | NoF1-16   
   | 5 161418 162209  | 792  | (+)   | 99.24   | NoF2-165 161928 16271   
   
   
   | 792  | (+)  | 98.859 No   
   
  | oH1-164 1619   
   
   | 04 162695 792   | (+)   
  | 98.859   
   | weH1-164
161117 16190  | 8 792 (+  | +) 96.95   | 58 SweH2  
  | -164 16097   
  | 7 161768  | 792  
  | (+)   | 96.958   |
| Unknown (Gar-A43R)   | -  | CPXV174  | NoF1-16   
   | 6 162317 162502  | 186  | (+)   | 93.651  | NoF2-166 162827 16300   
   
   
   | 180  | (+)  | 90.476 No   
   
  | oH1-165 1628   
   
   | 03 162982 180   | (+)   
  | 90.476   
   | weH1-165
162016 16220  | 4 189 (+  | +) 96.6  | 1 SweH2   
  | -165 16187   
  | 6 162064  | 189  
  | (+)   | 96.61  |
| CD47-like, integral membrane protein (Cop-A38L)  | A38L   | CPXV175  | NoF1-16   
   | 162499 163332  | 834  | (-)   | 99.278  | NoF2-167 163003 16383   
   
   
   | 834  | (-)  | 98.917 No   
   
  | oH1-166 1629   
   
   | 79 163812 834   | (-)   
  | 98.917   
   | weH1-166
162201 16303  | 4 834 (-  | -) 96.75   | 51 SweH2  
  | 166 16206  
  | 1 162894  | 834  
  | (-)   | 96.751   |
| Semaphorin (Cop-A39R)  | A39R   | CPXV176  | NoF1-16   
   | 8 163348 164559  | 1212   | (+)   | 98.01   | NoF2-168 163852 16505   
   
   
   | 1206   | (+)  | 98.25 No  
   
  | oH1-167 1638   
   
   | 28 165033 1206  | (+)   
  | 98.25  
   | weH1-167
163050 16428  | 8 1239 (+   | +) 98.78   | 36 SweH2  
  | -167 16291   
  | 0 164148  | 1239   
  | (+)   | 98.544   |
| Lectin homolog (Cop-A40R)  | A40R   | CPXV177  | NoF1-16   
   | 0 164581 165063  | 483  | (+)   | 97.5  | NoF2-169 165079 16556   
   
   
   | 483  | (+)  | 97.5 No   
   
  | oH1-168 1650   
   
   | 55 165537 483   | (+)   
  | 97.5   
   | weH1-168
164285 16476  | 7 483 (+  | +) 96.87   | 5 SweH2   
  | -168 16414   
  | 5 164627  | 483  
  | (+)   | 96.875   |
| Chemokine binding protein (Con-A41L)   | A41L   | CPXV178  | NoF1-17   
   | 165161 165823  | 663  | (-)   | 98.182  | NoF2-170 165659 16632   
   
   
   | 663  | (-)  | 97.727 No   
   
  | oH1-169 1656   
   
   | 35 166297 663   | (-)   
  | 97,727   
   | weH1-169
164865 1655   | 4 660 (-  | ) 98.17  | 4 SweH2   
  | -169 16472   
  | 5 165384  | 660  
  | (-)   | 98,174   |
| Profilin-like protein, ATI-localized (Con-A42R)  | A42R   | CPXV179  | NoF1-17   
   | 166002 166403  | 402  | (+)   | 99.248  | NoF2-171 166500 16690   
   
   
   | 402  | (+)  | 99.248 No   
   
  | oH1-170 1664   
   
   | 76 166877 402   | (+)   
  | 99.248   
   | weH1-170
165696 16609  | 7 402 (4  | +) 100   | SweH?   
  | -170 16555   
  | 6 165957  | 402  
  | (+)   | 100  |
| Type I mambrane alse comptain (Con A/3P)   | A/3D   | CPXV180  | NoE1 17   
   | 2 166441 167022  | 582  | (4)   | 98.964  | NoF2 172 166939 16752   
   
   
   | 582  | (+)  | 00.482 No   
   
  | JUI 171 1660   
   
   | 15 167496 582   | (+)   
  | 00.482   
   | well1 171
166135 16671   | 5 582 (4  | +) 100   | Small?   
   | 171 16500   
   | 5 166576  | 582   
   | (+)   | 100  |
| Type The novane grycoprotein (Cop A42 7D)  | 442.50   | CDVU101  | NoT 1-17.   
   | 100441 107022  | 302  | (+)   | 100   | N-F2-172 100737 10752   
   
   
   | 302  | (+)  | 100 No  
   
  | 111 172 1/74   
   
   | 00 1/7744 04/   | (+)   
  | 100 0  
   |               
  | 0 302 (†  | +) 100   | G   
  | 172 1///22   
  | 0 100010  | 302  
  | (+)   | 00.775   |
| Hypothetical protein (Cop-A45.5K)  | A45.5K   | CPAVI81  | NOP1-17.  
   | 5 16/025 16/2/0  | 240  | (+)   | 100   | N0F2-1/5 10/525 10/76   
   
   
   | 240  | (+)  | 100 No  
   
  | 0H1-1/2 10/4   
   
   | 99 10/744 240   | (+)   
  | 100 2  
   | WeH1-1/2
100/19 10090  | + <u>240</u> (+   | +) 98.70   | Swenz   
  | -1/2 1005/   
  | 9 100824  | 240  
  | (+)   | 98.705   |
| 3 beta-hydroxysteroid dehydrogenasejdeita 5->4 isomerase (Cop-A44L)  | A44L   | CPXV182  | Nol*1-1/-   
   | 16/362 168402  | 1041   | (-)   | 98.261  | NoF2-1/4 16/859 16889   
   
   
   | 1041   | (-)  | 98.261 No   
   
  | oHI-1/5 16/8   
   
   | 35 168875 1041  | (-)   
  | 98.261   
   | weHI-1/3
16/058 16805  | 5 10.58 (-  | -) 98.20   | 51 SweH2  
  | -1/3 16691   
  | 8 16/955  | 10.58  
  | (-)   | 98.261   |
| Inactive Cu-Zn superoxide dismutase-like virion protein (Cop-A45R)   | A45R   | CPXV183  | NoF1-17.  
   | 6 168449 168826  | 378  | (+)   | 98.4  | NoF2-175 168946 16932   
   
   
   | 378  | (+)  | 98.4 No   
   
  | oH1-174 1689   
   
   | 22 169299 378   | (+)   
  | 98.4   
   | weH1-174
168142 16851  | 9 378 (+  | +) 98.4  | SweH2   
  | -174 16800   
  | 2 168379  | 378  
  | (+)   | 98.4   |
| IL-1/TLR signaling inhibitor (Cop-A46R)  | A46R   | CPXV184  | NoF1-17   
   | 6 168816 169538  | 723  | (+)   | 98.75   | NoF2-176 169313 17003   
   
   
   | 723  | (+)  | 98.333 No   
   
  | oH1-175 1692   
   
   | 89 170011 723   | (+)   
  | 98.333 \$  
   | weH1-175
168509 16923  | 1 723 (+  | +) 99.58   | 3 SweH2   
  | -175 16836   
  | 9 169091  | 723  
  | (+)   | 99.167   |
| Immunoprevalent protein (Cop-A47L)   | A47L   | CPXV185  | NoF1-17   
   | 7 169674 170408  | 735  | (-)   | 97.131  | NoF2-177 170147 17088   
   
   
   | 735  | (-)  | 97.131 No   
   
  | oH1-176 1701   
   
   | 23 171031 909   | (-)   
  | 97.131   
   | weH1-176
169376 17011  | 0 735 (-  | -) 97.54   | 41 SweH2  
  | -176 16924   
  | 9 169983  | 735  
  | (-)   | 97.541   |
| Thymidylate kinase (Cop-A48R)  | A48R   | CPXV186  | NoF1-17   
   | 3 170281 171123  | 843  | (+)   | 97.333  | NoF2-178 170754 17159   
   
   
   | 843  | (+)  | 97.333 No   
   
  | oH1-177 1707   
   
   | 30 171572 843   | (+)   
  | 97.333   
   | weH1-177
170143 17082  | 6 684 (+  | +) 97.79   | 97 SweH2  
  | -177 17001   
  | 6 170699  | 684  
  | (+)   | 97.797   |
| Putative phosphotransferase anion transport pro tein (Cop-A49R)  | A49R   | CPXV187  | NoF1-17   
   | 0 171172 171660  | 489  | (+)   | 96.296  | NoF2-179 171645 17213   
   
   
   | 489  | (+)  | 96.296 No   
   
  | oH1-178 1716   
   
   | 21 172109 489   | (+)   
  | 96.296   
   | weH1-178
170875 17138  | 7 513 (+  | +) 96.29   | 6 SweH2   
  | -178 17074   
  | 8 171260  | 513  
  | (+)   | 96.296   |
| ATP-dependent DNA ligase (Cop-A50R)  | A50R   | CPXV188  | NoF1-18   
   | 0 171693 173357  | 1665   | (+)   | 99,638  | NoF2-180 172168 17383   
   
   
   | 1665   | (+)  | 99.639 No   
   
  | oH1-179 1721   
   
   | 44 173808 1665  | (+)   
  | 99.639   
   | weH1-179
171384 17304  | 2 1659 (+   | +) 99.09   | 7 SweH2   
  | -179 17125   
  | 7 172915  | 1659   
  | (+)   | 99.097   |
| Hynothetical protein (Con-A51R)  | A51R   | CPXV189  | NoF1-18   
   | 173410 174414  | 1005   | (+)   | 99.102  | NoF2-181 173885 17488   
   
   
   | 1005   | (+)  | 98.802 No   
   
  | oH1-180 1738   
   
   | 61 174865 1005  | (+)   
  | 99 102   
   | weH1-180
173095 17409  | 9 1005 (+   | +) 98.80   | 2 SweH2   
  | -180 17296   
  | 8 173972  | 1005   
  | (+)   | 98.802   |
| Toll/II.1 recentor-like protein II.1 NFkB sig polling inhibitor (Con-A52B)   | A52R   | CPXV190  | NoF1-18   
   | 174483 175055  | 573  | (4)   | 98 947  | NoF2-182 174960 17553   
   
   
   | 573  | (4)  | 98.947 No   
   
  | H1-181 1749  
   
   | 35 175507 573   | (4)   
  | 98 947   
   | weH1.181
174168 17474  | 3 576 (4  | +) 98.43   | 9 SweH2   
  | 181 17404  
  | 1 174616  | 576  
  | (+)   | 98.429   |
| TNE montos (Con C) (Con 452B)  | A520   | CumC/CDVU101   | .104.1.10   
   |  | 515  | (1)   | 70.741  | NoE2 102 174900 17505.  
   
   
   | 541  | (1)  | 04.086 No   
   
  | 111 102 1760   
   
   | 20 176290 561   | (1)   
  | 04.096   
   | malli 101
174100 17474   | 5 561 (1  | 1) 02.5  | 10 CumIP   
   | 192 17402   
   | 0 175400  | 541   
   | (1)   | 02 \$49  |
| INF receptor (CHRC) (Cop-ASSR)   | ADDK   | CHIC/CFXV191   | -   
   |  | -  | -   | -   | N0F2-185 175854 17041   
   
   
   | 201  | (+)  | 94.086 NO   
   
  | 0HI-182 1/58   
   
   | 29 170389 301   | (+)   
  | 94.080   
   | wehi-182
175055 17501  | 5 301 (+  | +) 95.54   | 8 Swenz   
  | -182 1/492   
  | 8 1/5488  | 201  
  | (+)   | 95.248   |
| UTV-B-192  |  | CPAV192  | NOP1-18.  
   | 5 1/5819 1/5989  | 1/1  | (+)   | 100   |   
   
   
   | 1.002  |  | 00.570  
   
  | 111 102 1866   
   
   | 5 / 1703 / S  |   
  | 000  
   | nup           
  | 1 1 1 1 1   |  |   
  | 100 10505  
  | 1 1 1 1 1 1 1   | 1.002  
  |   | 00.570   |
| BTB Kelch-domain containing protein; CRL comple x (Cop-A55R)   | A55R   | CPXV193  | NoF1-18   
   | 176193 177884  | 1692   | (+)   | 98.224  | NoF2-184 176679 17837   
   
   
   | 1692   | (+)  | 98.579 No   
   
  | oH1-183 1766   
   
   | 54 178345 1692  | (+)   
  | 98.579   
   | weH1-183
175884 1775   | 5 1692 (+   | +) 98.51   | 9 SweH2   
  | -183 17575   
  | 7 177448  | 1692   
  | (+)   | 98.579   |
| Hemagglutinin (Cop-A56R)   | A56R   | CPXV194  | NoF1-18   
   | 5 177936 178850  | 915  | (+)   | 94.737  | NoF2-185 178422 17933   
   
   
   | 915  | (+)  | 95.066 No   
   
  | oH1-184 1783   
   
   | 97 179311 915   | (+)   
  | 95.066   
   | weH1-184
177627 17852  | 6 900 (+  | +) 92  | SweH2   
  | -184 17750   
  | 0 178402  | 903  
  | (+)   | 92.667   |
|  |  |  |   
   |  |  |   | 00.005  | NoE2 186 170353 17004   
   
   
   | 594  | (+)  | 98.985 No   
   
  | oH1-185 1793   
   
   | 28 179921 594   | (+)   
  | 98.985   
   | weH1-185
178543 17913  | 6 594 (+  |  |   
  | 107 17041  
  | 9 179012  | 594  
  | (+)   | 98.985   |
| Guanylate kinase (Cop-A56.5R)  | A57R   | CPXV195  | NoF1-18   
   | 5 178867 179460  | 594  | (+)   | 98.985  | 1012-100 177555 17774   
   
   
   |  |  |   
   
  |  
   
   |   |   
  |  
   |               
  |   | +) 98.98   | 85 SweH2  
  | -185 1/841   
  |   |  
  |   | 97.324   |
| Guanylate kinase (Cop-A56.5R)<br>Ser[Thr Kinase (Cop-B1R)  | A57R<br>B1R  | CPXV195<br>CPXV196   | NoF1-18<br>NoF1-18  
   | 5 178867 179460<br>7 179610 180509   | 594<br>900   | (+)   | 98.985<br>97.324  | NoF2-187 180096 18099   
   
   
   | 900  | (+)  | 98.328 No   
   
  | oH1-186 1800   
   
   | 71 180970 900   | (+)   
  | 98.328   
   | weH1-186
179286 18018  | 5 900 (+  | +) 98.98<br>+) 97.32   | 5 SweH2<br>4 SweH2  
  | -185 17841   
  | 2 180061  | 900  
  | (+)   |  |
| (uanylate kinase (Cop-846.5R)<br>SerfThr Kinase (Cop-B1R)<br>Schafert (Cop-B2R)  | A57R<br>B1R<br>B2R   | CPXV195<br>CPXV196<br>CPXV197  | NoF1-18<br>NoF1-18<br>NoF1-18   
   | 5 178867 179460<br>7 179610 180509<br>8 180579 182096  | 594<br>900<br>1518   | (+)<br>(+)<br>(+)   | 98.985<br>97.324<br>94.257  | NoF2-187 180096 18099<br>NoF2-188 181065 18258  
   
   
   | 900<br>1518  | (+)<br>(+)   | 98.328 No<br>94.257 No  
   
  | oH1-186 1800<br>oH1-187 1810   
   
   | 71 180970 900<br>40 182557 1518   | (+)<br>(+)  
  | 98.328<br>94.257   
   | weH1-186
179286 18018<br>weH1-187 180253 18177   | 5 900 (+<br>0 1518 (+   | +) 98.90<br>+) 97.32<br>+) 96.23   | 85 SweH2<br>24 SweH2<br>18 SweH2  
  | -185 17841<br>-186 17916<br>-187 18012   
  | 2 180061<br>9 181646  | 900<br>1518  
  | (+)<br>(+)  | 96.238   |
| Guanylate kinase (Cop-A56-SR)<br>SerfThr Kinase (Cop-B1R)<br>Schlafen (Cop-B2R)<br>Alaxvini (Cop-B4R)  | A57R<br>B1R<br>B2R<br>B4R  | CPXV195<br>CPXV196<br>CPXV197<br>CPXV198   | NoF1-18<br>NoF1-18<br>NoF1-18<br>NoF1-18  
   | 5 178867 179460<br>7 179610 180509<br>8 180579 182096<br>9 182360 184045   | 594<br>900<br>1518<br>1686   | (+)<br>(+)<br>(+)<br>(+)  | 98.985<br>97.324<br>94.257<br>97.504  | NoF2-180 175555 17554<br>NoF2-187 180096 18099<br>NoF2-188 181065 18258<br>NoF2-189 182880 18449  
   
   
   | 900<br>1518<br>1611  | (+)<br>(+)<br>(+)  | 98.328 No<br>94.257 No<br>94.454 No   
   
  | oH1-186 1800<br>oH1-187 1810<br>oH1-188 1828   
   
   | 71 180970 900<br>40 182557 1518<br>55 184528 1674   | (+)<br>(+)<br>(+)   
  | 98.328<br>94.257<br>98.211   
   | weH1-186
179286 18018<br>weH1-187 180253 18177<br>weH1-188 182014 18369  | 5 900 (+<br>0 1518 (+<br>0 1677 (+  | +) 98.98<br>+) 97.32<br>+) 96.23<br>+) 97.31   | 85 SweH2<br>84 SweH2<br>88 SweH2<br>17 SweH2  
  | -185 17841<br>-186 17916<br>-187 18012<br>-188 18189   
  | 2 180061<br>9 181646<br>0 183566  | 900<br>1518<br>1677  
  | (+)<br>(+)<br>(+)   | 96.238<br>97.317   |
| Camphie kinse (Cop-AS-SR)<br>Ser(Thr Kinse (Cop-BIR)<br>Schlare (Cop-BIR)<br>Adayfni (Cop-BIR)<br>DEV tyoz-1 menhane elvoombein, arotective an tieen (Cop-BSR)   | A57R<br>B1R<br>B2R<br>B4R<br>B5R   | CPXV195<br>CPXV196<br>CPXV197<br>CPXV198<br>CPXV199  | NoF1-18<br>NoF1-18<br>NoF1-18<br>NoF1-18<br>NoF1-19   
   | 5 178867 179460<br>7 179610 180509<br>8 180579 182096<br>9 182360 184045<br>0 184149 185102  | 594<br>900<br>1518<br>1686<br>954  | (+)<br>(+)<br>(+)<br>(+)  | 98.985<br>97.324<br>94.257<br>97.504<br>98.738  | NoF2-180 17555 17554<br>NoF2-187 180096 18099<br>NoF2-188 181065 18258<br>NoF2-189 182880 18449<br>NoF2-190 184594 18554  
   
   
   | 900<br>1518<br>1611<br>954   | (+)<br>(+)<br>(+)<br>(+)   | 98.328 No<br>94.257 No<br>94.454 No<br>98.738 No  
   
  | oH1-186 1800<br>oH1-187 1810<br>oH1-188 1828<br>oH1-189 1846   
   
   | 71 180970 900<br>40 182557 1518<br>55 184528 1674<br>32 185585 954  | (+)<br>(+)<br>(+)<br>(+)  
  | 98.328<br>94.257<br>98.211<br>98.738   
   | weH1-186
179286 18018<br>weH1-187 180253 18177<br>weH1-188 182014 18369<br>weH1-189 183794 18474   | 5 900 (+<br>0 1518 (+<br>0 1677 (+<br>7 954 (+  | +) 98.98<br>+) 97.32<br>+) 96.22<br>+) 97.31<br>+) 97.31   | 85 SweH2<br>84 SweH2<br>88 SweH2<br>87 SweH2<br>88 SweH2  
  | -185 17841<br>-186 17916<br>-187 18012<br>-188 18189<br>-189 18367   
  | 2 180061<br>9 181646<br>0 183566<br>0 184623  | 900<br>1518<br>1677<br>954   
  | (+)<br>(+)<br>(+)<br>(+)  | 96.238<br>97.317<br>98.423   |
| Guanplate kinase (Cop-ASSR)<br>Ser(Thr Kinase (Cop-B1R)<br>Schlare (Cop-B2R)<br>Aukyrin (Cop-B4R)<br>EV type-1 membrane glycoprotein, protective an tigen (Cop-B5R)<br>Makytrink Barnetine (Con-B6R)   | A57R<br>B1R<br>B2R<br>B4R<br>B5R<br>B6R  | CPXV195<br>CPXV196<br>CPXV197<br>CPXV198<br>CPXV199<br>CPXV200   | NoF1-18<br>NoF1-18<br>NoF1-18<br>NoF1-18<br>NoF1-19<br>NoF1-19  
   | 5         178867         179460           7         179610         180509           8         180579         182096           9         182360         184045           0         184149         185102           185201         185500  | 594<br>900<br>1518<br>1686<br>954<br>300   | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  | 98.985<br>97.324<br>94.257<br>97.504<br>98.738<br>100   | NoF2-180 17555 17594<br>NoF2-187 180096 18099<br>NoF2-188 181065 18258<br>NoF2-189 182880 18449<br>NoF2-190 184594 18554<br>NoF2-191 185646 18617   
   
   
   | 900<br>1518<br>1611<br>954<br>534  | (+)<br>(+)<br>(+)<br>(+)<br>(+)  | 98.328 No<br>94.257 No<br>94.454 No<br>98.738 No<br>98.324 No   
   
  | oH1-186 1800<br>oH1-187 1810<br>oH1-188 1828<br>oH1-189 1846<br>oH1-190 1856   
   
   | 71 180970 900<br>40 182557 1518<br>55 184528 1674<br>32 185585 954<br>84 186217 534   | (+)<br>(+)<br>(+)<br>(+)<br>(+)   
  | 98.328 9<br>94.257 9<br>98.211 9<br>98.738 9<br>98.324 9   
   | weH1-186
179286 18018<br>weH1-187 180253 18177<br>weH1-188 182014 18369<br>weH1-189 183794 18474<br>weH1-190 184833 18536  | 5 900 (+<br>0 1518 (+<br>0 1677 (+<br>7 954 (+<br>9 537 (+  | +) 98.92<br>+) 97.32<br>+) 96.23<br>+) 97.31<br>+) 98.73<br>+) 98.73<br>+) 98.73   | IS         SweH2           24         SweH2           28         SweH2           17         SweH2           18         SweH2           18         SweH2           18         SweH2           18         SweH2           18         SweH2           16         SweH2   
  | -185 17841<br>-186 17916<br>-187 18012<br>-188 18189<br>-189 18367<br>-190 18470   
  | 2 180061<br>9 181646<br>0 183566<br>0 184623<br>9 185245  | 900<br>1518<br>1677<br>954<br>537  
  | (+)<br>(+)<br>(+)<br>(+)<br>(+)   | 96.238<br>97.317<br>98.423<br>93.296   |
| Camphie kinse (Cop-ASSR)<br>Serflar Kinse (Cop-BIR)<br>Schlafen (Cop-BR)<br>Ankyrin (Cop-BR)<br>EV type-1 menhane glycoprotein, protective an tigen (Cop-BSR)<br>Ankyrin kike protein (Cop-B6R)<br>Underson: EP archited (Cop-B7D)   | A57R<br>B1R<br>B2R<br>B4R<br>B5R<br>B6R<br>B7P   | CPXV195<br>CPXV196<br>CPXV197<br>CPXV198<br>CPXV199<br>CPXV200<br>CPXV200  | NoF1-18<br>NoF1-18<br>NoF1-18<br>NoF1-18<br>NoF1-19<br>NoF1-19<br>NoF1-19   
   | 178867         179460           7         179610         180509           8         180579         182096           9         182360         184045           1         184149         185102           1         185201         185500           1         185201         185201  | 594<br>900<br>1518<br>1686<br>954<br>300<br>546  | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  | 98.985<br>97.324<br>94.257<br>97.504<br>98.738<br>100<br>97.79  | NaF2-185 17555 17594<br>NaF2-187 180096 18099<br>NaF2-188 181065 18258<br>NaF2-189 182880 18449<br>NaF2-190 184594 18554<br>NaF2-191 185646 18617<br>NaF2-191 185618 18575  
   
   
   | 900<br>1518<br>1611<br>954<br>534<br>546   | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)   | 98.328 No<br>94.257 No<br>94.454 No<br>98.738 No<br>98.324 No<br>97.238 No  
   
  | oH1-186 1800<br>oH1-187 1810<br>oH1-188 1828<br>oH1-189 1846<br>oH1-190 1856<br>oH1 181 1862   
   
   | 71 180970 900<br>40 182557 1518<br>55 184528 1674<br>32 185585 954<br>84 186217 534<br>56 186801 546  | (+)<br>(+)<br>(+)<br>(+)<br>(+)   
  | 98.328 9<br>94.257 9<br>98.211 9<br>98.738 9<br>98.324 9   
   | weH1-186
179286 18018<br>weH1-187 180253 18177<br>weH1-188 182014 18369<br>weH1-189 183794 18474<br>weH1-190 184833 18536<br>weH1-190 184833 18536   | 5 900 (+<br>0 1518 (+<br>0 1677 (+<br>7 954 (+<br>9 537 (+<br>2 555 (+  | +) 98.92<br>+) 97.32<br>+) 96.22<br>+) 97.31<br>+) 98.73<br>+) 98.73<br>+) 98.73<br>+) 98.73   | SweH2           24         SweH2           28         SweH2           17         SweH2           18         SweH2           18         SweH2           18         SweH2           16         SweH2           16         SweH2           17         SweH2  
  | -185 17841<br>-186 17916<br>-187 18012<br>-188 18189<br>-189 18367<br>-190 18470   
  | 2 180061<br>9 181646<br>0 183566<br>0 184623<br>9 185245  | 900<br>1518<br>1677<br>954<br>537<br>555   
  | (+)<br>(+)<br>(+)<br>(+)<br>(+)   | 96.238<br>97.317<br>98.423<br>93.296<br>94.565   |
| Campite kinese (Cop-ASSR)<br>Ser(Thr Kinese (Cop-BIR)<br>Ser(Thr Kinese (Cop-BIR)<br>Schlaten (Cop-BIR)<br>EFX type-1 membrane glycoprotein, protective an tigen (Cop-BSR)<br>Makyfniskles proteine (Cop-B6R)<br>Vindence, BR existent (Cop-BFR)<br>Schlatent (Cop-BFR)  | A57R<br>B1R<br>B2R<br>B4R<br>B5R<br>B6R<br>B7R<br>B9P  | CPXV195<br>CPXV196<br>CPXV197<br>CPXV198<br>CPXV199<br>CPXV200<br>CPXV201<br>CPXV201   | NoF1-18<br>NoF1-18<br>NoF1-18<br>NoF1-18<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-19  
   | 5         178867         179460           7         179610         180509           8         180579         182096           9         182360         184045           1         184149         185102           1         185201         185500           2         185774         186319           8         198274         187171  | 594<br>900<br>1518<br>1686<br>954<br>300<br>546  | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  | 98.985<br>97.324<br>94.257<br>97.504<br>98.738<br>100<br>97.79<br>00.248  | NoF2-180         F7533         F7556           NoF2-187         180096         18099           NoF2-188         181065         18258           NoF2-189         182880         18449           NoF2-191         185646         18617           NoF2-192         186218         18676           NoF2-192         88818         18476   
   
   
   | 900<br>1518<br>1611<br>954<br>534<br>546<br>801  | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)   | 98.328 No<br>94.257 No<br>94.454 No<br>98.738 No<br>98.324 No<br>97.238 No<br>90.248 No   
   
  | bH1-186 1800<br>bH1-187 1810<br>bH1-188 1828<br>bH1-189 1846<br>bH1-190 1856<br>bH1-191 1862   
   
   | 71         180970         900           40         182557         1518           55         184528         1674           32         185585         954           84         186217         534           56         186801         546           52         187682         901   | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)   
  | 98.328 9<br>94.257 9<br>98.211 9<br>98.738 9<br>98.324 9<br>97.238 9<br>90.248 9   
   | weHI-186
179286 18018<br>weHI-187 180253 18177<br>weHI-188 182014 18366<br>weHI-189 183794 18474<br>weHI-190 184833 18536<br>weHI-191 18548 18596<br>weHI-191 18504 18596  | 5         900         (+           0         1518         (+           0         1677         (+           7         954         (+           9         537         (+           2         555         (+           4         801         (-  | +) 98.98<br>+) 97.32<br>+) 96.22<br>+) 97.31<br>+) 98.73<br>+) 98.73<br>+) 98.73<br>+) 94.56   | IS         SweH2           14         SweH2           18         SweH2           17         SweH2           18         SweH2           18         SweH2           18         SweH2           18         SweH2           16         SweH2           16         SweH2           16         SweH2           16         SweH2           16         SweH2  
  | -185 17841<br>-186 17916<br>-187 18012<br>-188 18189<br>-189 18367<br>-190 18470<br>-191 18528   
  | 2 180061<br>9 181646<br>0 183566<br>0 184623<br>9 185245<br>4 185838<br>0 186600  | 900<br>1518<br>1677<br>954<br>537<br>555<br>801  
  | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  | 96.238<br>97.317<br>98.423<br>93.296<br>94.565<br>08.872   |
| Camphie kinss (Cop-ASSR)<br>Sehlafen (Cop-BIR)<br>Schlafen (Cop-BIR)<br>Malynfn (Cop-BIR)<br>EV type-1 membrane glycoprotein, protective an figen (Cop-BSR)<br>Malynfik kee protein (Cop-BSR)<br>Malynfik kee protein (Cop-BSR)<br>Solbale (TV)-gr ecceptor-like protein (Cop-BSR)<br>Bandwert (Cop-BSR)<br>Distributer (Cop-BSR)  | A57R<br>B1R<br>B2R<br>B4R<br>B5R<br>B6R<br>B7R<br>B8R<br>B8R<br>B8R  | CPXV195<br>CPXV196<br>CPXV197<br>CPXV197<br>CPXV198<br>CPXV199<br>CPXV200<br>CPXV200<br>CPXV201<br>CPXV202   | NoF1-18           NoF1-18           NoF1-18           NoF1-18           NoF1-19           NoF1-19           NoF1-19           NoF1-19           NoF1-19           NoF1-19           NoF1-19   
   | 5         178867         179460           7         179610         180509           8         180579         182096           9         182360         184045           1         184149         185102           1         185201         185500           2         185774         186319           8         186771         187171  | 594<br>900<br>1518<br>1686<br>954<br>300<br>546<br>801<br>738  | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)   | 98.985<br>97.324<br>94.257<br>97.504<br>98.738<br>100<br>97.79<br>99.248<br>07.322  | NoF2-180 17555 17555<br>NoF2-180 18099<br>NoF2-189 182080 18449<br>NoF2-189 182580 18449<br>NoF2-190 184594 18554<br>NoF2-191 185646 18617<br>NoF2-192 186218 18676<br>NoF2-193 186815 18761  
   
   
   | 900<br>1518<br>1611<br>954<br>534<br>546<br>801<br>738   | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)   | 98.328 No<br>94.257 No<br>94.454 No<br>98.738 No<br>98.324 No<br>97.238 No<br>99.248 No   
   
  | bH1-186 1800<br>bH1-187 1810<br>bH1-188 1828<br>bH1-189 1846<br>bH1-190 1856<br>bH1-191 1862<br>bH1-192 1868<br>bH1-192 1868   
   
   | 71         180970         900           40         182557         1518           55         184528         1674           32         185585         954           84         186217         534           56         186801         546           53         187653         801           74         248         127  | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  
  | 98.328 9<br>94.257 9<br>98.211 9<br>98.738 9<br>98.324 9<br>97.238 9<br>99.248 9<br>99.248 9   
   | weHI-186
179286 18018<br>weHI-187 180253 1817<br>weHI-188 182014 18369<br>weHI-189 183794 18474<br>weHI-190 184833 18536<br>weHI-191 185408 18596<br>weHI-192 186014 18681<br>weHI-192 186014 18681  | $\begin{array}{cccccccccccccccccccccccccccccccccccc$  | +) 98.98<br>+) 97.32<br>+) 96.22<br>+) 97.31<br>+) 98.73<br>+) 98.73<br>+) 93.29<br>+) 94.56<br>+) 98.88<br>+) 98.98   | IS         SweH2           24         SweH2           38         SweH2           38         SweH2           38         SweH2           38         SweH2           38         SweH2           36         SweH2           36         SweH2           36         SweH2           36         SweH2           36         SweH2           37         SweH2           38         SweH2           39         SweH2           30         SweH2   
  | -185 17841<br>-186 17916<br>-187 18012<br>-188 18189<br>-189 18367<br>-190 18470<br>-191 18528<br>-192 18589   
  | 2 180061<br>9 181646<br>0 183566<br>0 184623<br>9 185245<br>4 185838<br>0 186690<br>2 187440  | 900<br>1518<br>1677<br>954<br>537<br>555<br>801<br>478   
  | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  | 96.238<br>97.317<br>98.423<br>93.296<br>94.565<br>98.872<br>06.880   |
| Camphie kinse: (Cop-A56,SR)<br>Ser(Thr Kinse: (Cop-B1R)<br>Ser(Thr Kinse: (Cop-B1R)<br>Schlater: (Cop-B2R)<br>Askyrin: (Cop-B2R)<br>Der Vyrp-1: menhane: glycoprotein, protective an tigen (Cop-B5R)<br>Askyrin-like: protein (Cop-B6R)<br>Virdexce, ER resident (Cop-B7R)<br>Schlate (TN, ergeren Kie protein (Cop-B5R)<br>ER-bendard approtosis: regulator (Cop-B5R)<br>ER-bendard approtosis: regulator (Cop-B5R)   | A57R<br>B1R<br>B2R<br>B4R<br>B5R<br>B6R<br>B7R<br>B5R<br>B9R<br>B10D   | CPXV195<br>CPXV196<br>CPXV197<br>CPXV199<br>CPXV199<br>CPXV200<br>CPXV200<br>CPXV201<br>CPXV202<br>CPXV202<br>CPXV203<br>CPXV203   | NoF1-18           NoF1-18           NoF1-18           NoF1-18           NoF1-19   
   | 5 178867 179460<br>7 179610 180509<br>8 180579 182096<br>9 182360 184045<br>1 184149 185102<br>1 185201 185500<br>2 185774 186319<br>8 186371 187171<br>1 1871792 18792  | 594<br>900<br>1518<br>1686<br>954<br>300<br>546<br>801<br>738  | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  | 98.985<br>97.324<br>94.257<br>97.504<br>98.738<br>100<br>97.79<br>99.248<br>97.333<br>90.002  | NoF2-180         F7523           NoF2-180         18096           NoF2-183         18059           NoF2-189         182880           NoF2-193         182880           NoF2-191         18554           NoF2-192         184594           NoF2-191         185646           NoF2-192         18617           NoF2-193         186815           NoF2-194         187636           NoF2-194         187636  
   
   
   | 900<br>1518<br>1611<br>954<br>534<br>546<br>801<br>738<br>1506   | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)   | 98.328 No<br>94.257 No<br>94.454 No<br>98.738 No<br>98.324 No<br>97.238 No<br>99.248 No<br>97.233 No  
   
  | pH1-186         1800           pH1-187         1810           pH1-188         1828           pH1-189         1846           pH1-189         1846           pH1-190         1856           pH1-191         1862           pH1-192         1868           pH1-193         1876   
   
   | 71         180970         900           40         182557         1518           55         184528         1674           32         185585         954           84         186217         534           56         186801         546           53         187653         801           74         188411         738   | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)   
  | 98.328 9<br>94.257 9<br>98.211 9<br>98.738 9<br>98.324 9<br>97.238 9<br>99.248 9<br>97.333 9<br>99.002   
   | weH1-186 179286 18018<br>weH1-187 180253 18177<br>weH1-188 182014 18369<br>weH1-189 183794 18474<br>weH1-190 184833 18533<br>weH1-191 185408 18598<br>weH1-192 186014 1868<br>weH1-192 186896 18757                 
  | 5         900         (+           0         1518         (+           0         1518         (+           0         1677         (+           7         954         (+           9         537         (+           2         555         (+           4         801         (+           3         678         (+   | +) 98.92<br>+) 97.33<br>+) 96.23<br>+) 97.31<br>+) 98.73<br>+) 98.73<br>+) 93.29<br>+) 94.56<br>+) 98.88<br>+) 96.88<br>+) 96.83<br>+) 96.83<br>+) 96.23<br>+) 96.23<br>+) 97.31<br>+) 97.31<br>+) 96.23<br>+) 97.31<br>+) 97.32<br>+) 97.   | IS         SweH2           24         SweH2           38         SweH2           38         SweH2           38         SweH2           38         SweH2           36         SweH2           36         SweH2           36         SweH2           36         SweH2           36         SweH2           37         SweH2           38         SweH2           39         SweH2           30         SweH2  
  | -183 17841<br>-186 17916<br>-187 18012<br>-188 18189<br>-189 18367<br>-190 18470<br>-191 18528<br>-192 18589<br>-193 18677<br>-194 18770   
  | 2 180061<br>9 181646<br>0 183566<br>0 184623<br>9 185245<br>4 185838<br>0 186690<br>2 187449<br>5 180100  | 900<br>1518<br>1677<br>954<br>537<br>555<br>801<br>678<br>1506  | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  | 96.238<br>97.317<br>98.423<br>93.296<br>94.565<br>98.872<br>96.889<br>90.202   
   |
| Cample kinse (Cop-A5.5R)<br>Senthern (Cop-B1R)<br>Schlaren (Cop-B2R)<br>Ankyrin (Cop-B2R)<br>Daty Type I membrane glycoprotein, protective an tigen (Cop-B5R)<br>Daty Type I membrane glycoprotein, protective an tigen (Cop-B5R)<br>Ankyrinikker, DR resident (Cop-B6R)<br>Schlabe Type arcespoor like protein (Cop-B5R)<br>Behensland approtein (Cop-B5R)<br>Federables protein (Cop-B5R)<br>Federables protein (Cop-B5R)  | A57R<br>BIR<br>B2R<br>B4R<br>B5R<br>B6R<br>B7R<br>B8R<br>B9R<br>B10R<br>B10R   | CPXV195<br>CPXV196<br>CPXV197<br>CPXV198<br>CPXV199<br>CPXV200<br>CPXV200<br>CPXV201<br>CPXV202<br>CPXV202<br>CPXV202<br>CPXV203<br>CPXV204<br>CPXV204   | NoF1-18           NoF1-18           NoF1-18           NoF1-18           NoF1-19   
   | 5 178867 179460<br>7 179610 180509<br>8 180579 182096<br>9 182360 184045<br>1 185201 185500<br>1 185201 185500<br>2 185774 186319<br>8 186371 187171<br>1 187192 187929<br>1 180762 189591<br>1 180662 100000  | 594<br>900<br>1518<br>1686<br>954<br>300<br>546<br>801<br>738<br>1506<br>207   | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  | 98.985<br>97.324<br>94.257<br>97.504<br>98.738<br>100<br>97.79<br>99.248<br>97.333<br>99.002<br>04.02   | NoF2-181         18006         18099           NoF2-181         18006         18099           NoF2-181         181065         18258           NoF2-190         184594         18554           NoF2-191         185646         18617           NoF2-191         185646         18617           NoF2-191         1856418         18761           NoF2-193         186815         18761           NoF2-194         187636         18837           NoF2-195         188191         19002           NoF2-195         188191         19002  
   
   
   | 900<br>1518<br>1611<br>954<br>534<br>546<br>801<br>738<br>1506<br>225  | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)   | 98.328 No<br>94.257 No<br>94.454 No<br>98.738 No<br>98.324 No<br>97.238 No<br>99.248 No<br>97.333 No<br>99.002 No   
   
  | bH1-186         1800           bH1-187         1810           oH1-188         1828           oH1-189         1846           oH1-190         1856           oH1-191         1862           oH1-191         1862           oH1-191         1862           oH1-191         1862           oH1-192         1868           oH1-193         1876           oH1-194         1885  
   
   | 71 180970 900<br>40 182557 1518<br>55 184528 1674<br>32 185585 954<br>84 186217 534<br>56 186801 546<br>53 187653 801<br>74 188411 738<br>57 190062 1506  | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  
  | 98.328<br>94.257<br>98.211<br>98.738<br>98.324<br>97.238<br>99.248<br>97.333<br>99.002<br>99.002<br>90.002   
   | weH1-186 179286 18018<br>weH1-187 180253 18177<br>weH1-188 182014 18366<br>weH1-198 183794 18473<br>weH1-191 185408 18550<br>weH1-192 1864014 18688<br>weH1-193 185508 18597<br>weH1-194 187719 18922<br>weH1-194
187719 18922   | $\begin{array}{c ccccccccccccccccccccccccccccccccccc$   | +) 98,92<br>+) 97,33<br>+) 96,22<br>+) 97,31<br>+) 98,73<br>+) 98,73<br>+) 93,25<br>+) 94,56<br>+) 98,85<br>+) 98,85<br>+) 96,82<br>+) 96,82   | IS         SweH2           V4         SweH2           V8         SweH2           V8         SweH2           V8         SweH2           V8         SweH2           V6         SweH2           V6         SweH2           V6         SweH2           V9         SweH2           V9         SweH2           V2         SweH2           V2         SweH2           V2         SweH2           V2         SweH2           V2         SweH2  
   | -183 17841<br>-186 17916<br>-187 18012<br>-188 18189<br>-189 18367<br>-190 18470<br>-191 18528<br>-192 18589<br>-193 18677<br>-194 18759  
   | 2 180061<br>9 181646<br>0 183566<br>0 184623<br>9 185245<br>4 185838<br>0 186690<br>2 187449<br>5 189100  | 900<br>1518<br>1677<br>954<br>537<br>555<br>801<br>678<br>1506<br>235   
   | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  | 96.238<br>97.317<br>98.423<br>93.296<br>94.565<br>98.872<br>96.889<br>99.202   |
| Camphie kinsse (Cop-845.8)<br>Ser(Thr Kinsse (Cop-81R)<br>Soldnen (Cop-B1R)<br>Malyrin (Cop-B2R)<br>EV type-1 menhane glycoprotein, protective an tigen (Cop-85R)<br>Malyrin Kike protein (Cop-86R)<br>Vintence, ER resident (Cop-85R)<br>ER-boalder Jayoutosis regulator (Cop-85R)<br>ER-boalder Jayoutosi   | A57R<br>B1R<br>B2R<br>B4R<br>B5R<br>B6R<br>B7R<br>B8R<br>B9R<br>B10R<br>B11R<br>B11R   | CPXV195<br>CPXV196<br>CPXV197<br>CPXV197<br>CPXV198<br>CPXV199<br>CPXV200<br>CPXV200<br>CPXV201<br>CPXV202<br>CPXV203<br>CPXV204<br>CPXV205  | NoF1-18           NoF1-18           NoF1-18           NoF1-19   | 5 178867 179460<br>7 179610 180509<br>8 180579 182096<br>1 82360 184045<br>1 84149 185102<br>1 85201 185500<br>2 185774 186319<br>8 186371 187171<br>1 87192 187929<br>5 188076 189581<br>5 189663 189887  
   | 594<br>900<br>1518<br>1686<br>954<br>300<br>546<br>801<br>738<br>1506<br>225<br>225  | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  | 98.985<br>97.324<br>94.257<br>97.504<br>98.738<br>100<br>97.79<br>99.248<br>97.333<br>99.002<br>94.03<br>94.03  | NoT-181         1000-6         1000-6           NoF2-181         1800-6         1809-9           NoF2-188         1810-5         18258           NoF2-191         1828-88         184-94           NoF2-191         18554         18564           NoF2-192         18554         18576           NoF2-192         18554         18676           NoF2-193         186545         18676           NoF2-194         18564         18676           NoF2-195         186515         18761           NoF2-194         18564         19002           NoF2-195         188519         19002           NoF2-194         18564         19002           NoF2-195         188519         19002           NoF2-196         189106         19003   
   
  | 900<br>1518<br>1611<br>954<br>534<br>546<br>801<br>738<br>1506<br>225<br>2(1)  
   | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)   | 98.328 No<br>94.257 No<br>94.454 No<br>98.738 No<br>98.324 No<br>97.238 No<br>99.248 No<br>97.333 No<br>99.002 No<br>94.03 No  
   
   | bH1-186         1800           bH1-187         1810           bH1-187         1810           bH1-188         1828           bH1-189         1846           bH1-190         1856           bH1-191         1862           bH1-191         1862           bH1-192         1868           bH1-193         1876           bH1-194         1885           bH1-195         1901   
   
  | 11         180970         900           40         182557         1518           55         184528         1674           32         185585         954           48         186217         534           56         186801         546           53         187653         801           74         188411         738           57         190062         1506           44         190308         225  | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)   | 98.328 9<br>94.257 9<br>98.211 9<br>98.738 9<br>98.324 9<br>97.238 9<br>99.248 9<br>97.333 9<br>99.002 9<br>94.03 9   
   
  | weH1-186 179286 18018<br>weH1-187 180253 18177<br>weH1-188 182014 18366<br>weH1-190 184833 18373<br>weH1-190 184833 18373<br>weH1-191 185408 18599<br>weH1-192 186014 18689<br>weH1-193 186896 18757<br>weH1-194 187719 18922<br>weH1-195 189306 18957   
   | $\begin{array}{cccccccccccccccccccccccccccccccccccc$  | +) 98.92<br>+) 97.32<br>+) 96.22<br>+) 97.31<br>+) 98.72<br>+) 98.72<br>+) 98.45<br>+) 98.85<br>+) 98.85<br>+) 99.20<br>+) 99.   | IS         SweH2           V4         SweH2           V8         SweH2           V8         SweH2           V8         SweH2           V8         SweH2           V6         SweH2           V6         SweH2           V6         SweH2           V9         SweH2           V10         SweH2           V3         SweH2           V4         SweH2           V6         SweH2           V6         SweH2  
   | 188 17941<br>186 17916<br>187 18012<br>188 18189<br>189 18367<br>190 18470<br>191 18528<br>192 18589<br>193 18677<br>194 18759<br>195 18918<br>195 18918<br>195 18918   
   | 2 180061<br>9 181646<br>0 183566<br>0 184623<br>9 185245<br>4 185838<br>0 186690<br>2 187449<br>5 189100<br>2 189406  | 900<br>1518<br>1677<br>954<br>537<br>555<br>801<br>678<br>1506<br>225<br>2050   | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  | 96.238<br>97.317<br>98.423<br>93.296<br>94.565<br>98.872<br>96.889<br>99.202<br>94.03   
  |
| Cample kinss (Cop-A5.5R)<br>Senfar Kinss (Cop-B1R)<br>Schufer (Cop-B2R)<br>Ankyrin (Cop-B4R)<br>EV type-1 membrane glycoprotein, protective an tigen (Cop-B5R)<br>EV type-1 membrane glycoprotein, protective an tigen (Cop-B5R)<br>Makyrinikke protein (Cop-B6R)<br>Schube Type-2 membrane glycoprotein (Cop-B5R)<br>E-Ro-Balaed approtein (Cop-B5R)<br>E-Ro-Balaed approtein (Cop-B5R)<br>E-Ro-Balaed approtein (Cop-B5R)<br>Hypothesical protein (Cop-B5R)<br>Hypothesical protein (Cop-B5R)  | A57R<br>B1R<br>B2R<br>B4R<br>B5R<br>B6R<br>B7R<br>B8R<br>B9R<br>B10R<br>B11R<br>B12R   | CPXV195<br>CPXV196<br>CPXV197<br>CPXV197<br>CPXV198<br>CPXV200<br>CPXV200<br>CPXV201<br>CPXV202<br>CPXV203<br>CPXV203<br>CPXV204<br>CPXV205<br>CPXV205   | NoF1-18           NoF1-18           NoF1-18           NoF1-19   
   | 5 178867 179460<br>7 179610 180509<br>8 180579 182096<br>1 82360 184045<br>1 85201 185500<br>2 185714 186319<br>1 86371 187171<br>1 86372 187729<br>5 188076 189581<br>5 189663 189887<br>7 189954 190817  | 594<br>900<br>1518<br>1686<br>954<br>300<br>546<br>801<br>738<br>1506<br>225<br>864  | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  | 98.985<br>97.324<br>94.257<br>97.504<br>98.738<br>100<br>97.79<br>99.248<br>97.333<br>99.002<br>94.03<br>98.258<br>98.258   | NoT-103         10006         10006           NoT-187         10006         18009           NoT-188         181065         18258           NoT-198         182880         18449           NoT-190         185546         18576           NoT-191         185546         18574           NoT-192         185546         18671           NoT-193         185545         18761           NoT-2-193         186515         18761           NoT-2-194         187636         18837           NoT-2-195         185519         19000           NoT-2-196         190106         19033           NoT-2-197         190397         191269   
   
   
   | 900<br>1518<br>1611<br>954<br>534<br>534<br>801<br>738<br>1506<br>225<br>864   | (+)            | 98.328         No           94.257         Na           94.454         Na           98.738         Na           98.738         Na           97.238         Na           99.248         Na           99.248         Na           99.002         Na           94.03         Na           98.955         Na  
   
  | bH1-186         1800           bH1-187         1810           bH1-188         1828           bH1-189         1846           bH1-190         1856           bH1-191         1862           bH1-192         1868           bH1-193         1876           bH1-194         1885           bH1-195         1901           bH1-195         1901   
   
   | 71         180970         900           40         182557         1518           55         184528         1674           32         185585         954           84         186217         534           56         186801         546           53         187653         801           74         18411         738           75         190062         1506           44         190368         225           35         191298         864   | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  
  | 98.328         94.257         9           94.257         9         9         9           98.211         9         9         9         9           98.324         9         9         9         9         9           97.238         9         99.248         9   
   | weH1-186 179286 18018<br>weH1-187 180253 18177<br>weH1-188 182014 18366<br>weH1-190 184833 185394 18474<br>weH1-190 184833 185394<br>weH1-191 185408 18590<br>weH1-192 186014 18688<br>weH1-192 186896 18757<br>weH1-195 189306 18953<br>weH1-196 189597
19046   | 5         900         (+           0         1518         (+           0         1677         (+           7         954         (+           2         555         (+           4         801         (+           3         678         (+           4         1506         (+           0         225         (+           5         870         (+  | +) 98.92<br>+) 97.32<br>+) 96.22<br>+) 97.31<br>+) 98.72<br>+) 98.72<br>+) 98.82<br>+) 98.82<br>+) 99.20<br>+) 99.20<br>+) 99.40<br>+) 98.61<br>+) 98.   | IS         SweH2           V4         SweH2           V8         SweH2           V8         SweH2           V8         SweH2           V6         SweH2           V6         SweH2           V7         SweH2           V8         SweH2           V9         SweH2           V9         SweH2           V2         SweH2           V3         SweH2           V3         SweH2           V4         SweH2  
  | -185 17841<br>-186 17916<br>-187 18012<br>-188 18189<br>-189 18367<br>-190 18470<br>-191 18528<br>-192 18589<br>-193 18677<br>-194 18759<br>-195 18918<br>-196 18947   
  | 2 180061<br>9 181646<br>0 183566<br>0 184623<br>9 185245<br>4 185838<br>0 186690<br>2 187449<br>186690<br>2 187449<br>5 189100<br>2 189406<br>3 190342  | 900<br>1518<br>1677<br>954<br>537<br>555<br>801<br>678<br>1506<br>225<br>870  | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  | 96.238<br>97.317<br>98.423<br>93.296<br>94.565<br>98.872<br>96.889<br>99.202<br>94.03<br>98.616  
   |
| Camphie kinsse (Cop-85.5R)<br>Ser(Thr Kinsse (Cop-81R)<br>Sathane (Cop-81R)<br>Makyrin (Cop-82R)<br>EV type-1 membrane glycoprotein, protective an tigen (Cop-85R)<br>Makyrin kike protein (Cop-86R)<br>Vindeare, ER resident (Cop-87R)<br>Bahde IT-N erceptor-like protein (Cop-88R)<br>ER-localized approtein screduler (Cop-89R)<br>Keb-bilke protein (Cop-810R)<br>Bryoderfead paroties regulater (Cop-81R)<br>Ser(Thr Kinsse (Cop-812R)<br>Ser(Thr Kinsse (Cop-812R)  | A 57R<br>B1R<br>B2R<br>B4R<br>B5R<br>B5R<br>B7R<br>B7R<br>B7R<br>B7R<br>B7R<br>B10R<br>B11R<br>B12R<br>B14R  | CPXV195<br>CPXV196<br>CPXV197<br>CPXV197<br>CPXV199<br>CPXV200<br>CPXV200<br>CPXV200<br>CPXV202<br>CPXV203<br>CPXV203<br>CPXV204<br>CPXV205<br>CPXV205<br>CPXV206<br>CrmA/CPXV207  | NoF1-18           NoF1-18           NoF1-18           NoF1-19   
   | 5 178867 179460<br>7 179610 180509<br>9 180509<br>1 180509<br>1 182360 184045<br>1 184149 185102<br>1 184149 185102<br>1 184149 185102<br>1 184774 186319<br>8 186371 187171<br>1 87192 187929<br>1 187954 189887<br>1 189954 190817<br>8 190914 191948  | 594           900           1518           1686           954           300           546           801           738           1506           225           864           1035  | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  | 98.985<br>97.324<br>94.257<br>97.504<br>98.738<br>100<br>97.79<br>99.248<br>97.333<br>99.002<br>94.03<br>98.258<br>97.674   | NoT-181         10006         18009           NoT-181         18006         18099           NoT-188         18105         18258           NoT-189         182880         18449           NoT-191         185646         18617           NoT-2191         185646         18617           NoT-2192         186218         18767           NoT-2193         186815         18761           NoT-2195         188519         19002           NoT-2195         188519         19003           NoT-2195         188519         19003           NoT-2196         190130         191356           NoT-2198         18135         191356  
   
   
   | 900<br>1518<br>1611<br>954<br>534<br>546<br>801<br>738<br>1506<br>225<br>864<br>1035   | (+)           (+)           (+)           (+)           (+)           (+)           (+)           (+)           (+)           (+)           (+)           (+)           (+)           (+)           (+)           (+)           (+)           (+)           (+)  | 98.328         No           94.257         No           94.454         No           98.738         No           98.324         No           97.238         No           99.248         No           97.333         No           99.002         No           94.03         No           98.955         No  
   
  | oH1-186         1800           oH1-187         1810           oH1-187         1810           oH1-188         1828           oH1-189         1846           oH1-190         1856           oH1-191         1862           oH1-191         1862           oH1-191         1862           oH1-192         1868           oH1-193         1876           oH1-194         1885           oH1-195         1901           oH1-196         1904           oH1-197         1913   
   
   | 11         180970         900           40         182557         1518           55         184528         1674           32         18558         957           32         18558         954           484         186217         534           56         186801         546           53         187653         801           74         188411         738           74         190368         225           35         191298         864           94         192428         1035   | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  
  | 98.328         94.257         9           98.211         9         9         9           98.718         9         9         9           98.324         9         9         9           97.238         9         9         9           97.333         9         9         9           94.03         9         9         9           98.955         9         97.093         9   
   | weH1-186         179286         18017           weH1-187         180253         1817           weH1-188         18304         18369           weH1-188         183794         1847           weH1-190         184833         18379           weH1-191   
     1856014         1868           weH1-191         184633         18379           weH1-192         186014         1868           weH1-193         186014         1868           weH1-194         187179         18925           weH1-195         186014         1868           weH1-194         187179         18925           weH1-195         189306         18925           weH1-196         189597         19046           weH1-197         190563         19155  | \$ 900         (+           0         1518         (+           0         1677         (+           0         1677         (+           2         555         (+           4         801         (+           3         678         (+           4         1056         (+           0         2255         (+           4         1506         (+           7         1035         (+  | +)         98,92           +)         97,31           +)         96,22           +)         97,31           +)         98,73           +)         97,31           +)         98,73           +)         93,29           +)         94,54           +)         94,54           +)         96,88           +)         99,20           +)         94,0           +)         98,66           +)         97,05  | 35         SweH2           34         SweH2           38         SweH2           38         SweH2           38         SweH2           36         SweH2           37         SweH2           36         SweH2           36         SweH2           36         SweH2           37         SweH2           38         SweH2           39         SweH2           30         SweH2           31         SweH2           32         SweH2           33         SweH2           34         SweH2           35         SweH2           36         SweH2           37         SweH2           38         SweH2           39         SweH2           30         SweH2   
  | 183         17841           186         17916           -187         18012           -188         18189           -189         18367           -190         18470           -191         18528           -192         18589           -193         18677           -194         18759           -195         18918           -196         18947           -197         19043   
  | 2 180061<br>9 181646<br>0 183566<br>0 184623<br>9 185245<br>4 185838<br>0 186690<br>2 187449<br>5 189100<br>2 189406<br>3 190342<br>9 9 191473  | 900<br>1518<br>1677<br>954<br>537<br>555<br>801<br>678<br>1506<br>225<br>870<br>1035   
  | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  | 96.238<br>97.317<br>98.423<br>93.296<br>94.565<br>98.872<br>96.889<br>99.202<br>94.03<br>98.616<br>97.093  |
| Cample kinse (Cop-A5.5R)<br>Senfar Kinse (Cop-B1R)<br>Schufer (Cop-B1R)<br>Askyrin (Cop-B4R)<br>EV type-1 membrane glycoprotein, protective an tigen (Cop-B5R)<br>EV type-1 membrane glycoprotein, protective an tigen (Cop-B5R)<br>Makyrinikke protein (Cop-B6R)<br>Schube Type (Cop-B6R)<br>Schube Type (Cop-B6R)<br>Eckb-Bie protein (Cop-B1R)<br>Script 1.2,3 (Cop-KL)<br>Bypothesical protein (Cop-B1R)<br>Script 1.2,3 (Cop-KL)<br>Bypothesical (Cop-16L)  | A 57R<br>B1R<br>B2R<br>B4R<br>B5R<br>B5R<br>B7R<br>B8R<br>B9R<br>B10R<br>B11R<br>B11R<br>B14R<br>B15R  | CPXV195<br>CPXV196<br>CPXV197<br>CPXV197<br>CPXV198<br>CPXV198<br>CPXV200<br>CPXV200<br>CPXV201<br>CPXV202<br>CPXV203<br>CPXV204<br>CPXV204<br>CPXV205<br>CPXV206<br>CPXV206<br>CPXV206  | NoF1-18           NoF1-18           NoF1-18           NoF1-19   
   | 5 178867 179460<br>1796(1) 180509<br>182360 184045<br>182360 184045<br>183267 184045<br>184149 185102<br>185201 18500<br>185201 18500<br>185701 187121<br>187192 187929<br>5 188076 189581<br>5 189663 189887<br>189954 190817<br>189954 199148<br>9 199079 19528  | 594           900           1518           1686           954           300           546           801           738           1506           225           864           1035           450  | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  | 98.985<br>97.324<br>94.257<br>97.504<br>98.738<br>100<br>97.79<br>99.248<br>97.333<br>99.002<br>94.03<br>98.258<br>97.674<br>99.329   | NoF2-187         100061         18099           NoF2-188         180065         18258           NoF2-180         181055         18258           NoF2-191         185461         18417           NoF2-191         185461         18417           NoF2-191         185461         18417           NoF2-191         185461         18417           NoF2-191         186415         18761           NoF2-191         186415         18761           NoF2-191         186415         18761           NoF2-191         186415         18761           NoF2-194         187636         18837           NoF2-195         198519         9002           NoF2-196         19016         19033           NoF2-197         19037         19126           NoF2-197         19037         19126           NoF2-197         19037         19126           NoF2-197         19037         19126           NoF2-197         19230         19230  
   
   
   | 900<br>1518<br>1611<br>954<br>534<br>546<br>801<br>738<br>1506<br>225<br>864<br>1035<br>450  | (+)            | 98.328         Noi           94.257         Noi           94.454         Noi           98.738         Noi           98.738         Noi           98.324         Noi           97.238         Noi           97.238         Noi           97.333         Noi           99.002         Noi           98.955         Noi           97.033         Noi           97.033         Noi           97.033         Noi   
   
  | oH1-186         1800           oH1-186         1800           oH1-187         1810           oH1-188         1828           oH1-190         1856           oH1-191         1862           oH1-191         1862           oH1-192         1868           oH1-192         1868           oH1-194         1852           oH1-195         1901           oH1-195         1901           oH1-196         1904           oH1-197         1913           oH1-198         1925   
   
   | 11         1180970         900           11         180970         900           40         182847         1518           55         15428         16585           51         185585         954           48         186217         534           56         186680         546           53         187653         801           74         188411         738           77         190062         1506           44         190368         225           35         191298         864           4192428         1035         58           58         193007         450   | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  
  | 98.328         94.257         9           98.211         9         9         9           98.718         9         9         9           98.324         9         9         9           97.238         9         9         9         9           97.333         9         9         9         9           94.03         9         9         9         9           98.955         9         9         9         9           99.329         9         329         9         9   
   | weH1-186         179286         18015           weH1-187         18023         18177           weH1-188         18024         18364           weH1-188         18774         18474           weH1-190         18433         18536           weH1-191         185408         18996           weH1-192        
185401         18364           weH1-194         18710         18926           weH1-194         18711         18926           weH1-194         18711         18926           weH1-194         189306         18957           weH1-194         189391         19944           weH1-194         19972         19944  | 5         900         (+           0         1518         (+           0         1677         (+           0         1677         (+           2         555         (+           2         555         (+           2         555         (+           4         801         (+           0         225         (+           0         225         (+           6         870         (+           4         450         (+  | +) 98,92<br>+) 97,33<br>+) 96,22<br>+) 97,33<br>+) 98,72<br>+) 93,25<br>+) 93,25<br>+) 94,56<br>+) 98,87<br>+) 98,87<br>+) 98,87<br>+) 99,20<br>+) 99,20<br>+) 99,32<br>+) 99,42<br>+) 99,42<br>+) 99,42<br>+) 99,42<br>+) 99,42<br>+) 99,42<br>+) 99,   | 35         SweH2           24         SweH2           38         SweH2           38         SweH2           38         SweH2           38         SweH2           36         SweH2           35         SweH2           36         SweH2           37         SweH2           38         SweH2           39         SweH2           30         SweH2           31         SweH2           32         SweH2           33         SweH2           34         SweH2           35         SweH2           36         SweH2           37         SweH2           38         SweH2           38         SweH2           38         SweH2           38         SweH2           39         SweH2           39         SweH2           30         SweH2           31         SweH2           32         SweH2           33         SweH2           34         SweH2           35         SweH2           36         SweH2 <th>183         17841           186         17916           187         18012           188         18189           189         18367           190         18470           191         18528           192         18589           193         18677           194         18759           195         18918           196         18947           197         19043           198         19159</th> <th>2 180061<br/>9 181646<br/>0 183566<br/>0 184623<br/>9 185245<br/>4 185838<br/>0 186690<br/>2 187449<br/>5 189100<br/>2 187449<br/>5 189100<br/>2 189406<br/>3 190342<br/>9 191473<br/>7 192046</th> <th>900<br/>1518<br/>1677<br/>954<br/>537<br/>555<br/>801<br/>1506<br/>225<br/>870<br/>1035<br/>450</th> <th>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)</th> <th>96.238<br/>97.317<br/>98.423<br/>93.296<br/>94.565<br/>98.872<br/>96.889<br/>99.202<br/>94.03<br/>98.616<br/>97.093<br/>98.658</th>   
  | 183         17841           186         17916           187         18012           188         18189           189         18367           190         18470           191         18528           192         18589           193         18677           194         18759           195         18918           196         18947           197         19043           198         19159  
  | 2 180061<br>9 181646<br>0 183566<br>0 184623<br>9 185245<br>4 185838<br>0 186690<br>2 187449<br>5 189100<br>2 187449<br>5 189100<br>2 189406<br>3 190342<br>9 191473<br>7 192046  | 900<br>1518<br>1677<br>954<br>537<br>555<br>801<br>1506<br>225<br>870<br>1035<br>450  | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  | 96.238<br>97.317<br>98.423<br>93.296<br>94.565<br>98.872<br>96.889<br>99.202<br>94.03<br>98.616<br>97.093<br>98.658  
   |
| Gamphic kinss: (Cop-85.8)           Synther Kinss: (Cop-81R)           Schlafen (Cop-81R)           Adkyrfn (Cop-81R)           Difference (Cop-81R)           Mix (risk protein (Cop-81R)           Virgen-1 menhane glycoprotein, protective an figen (Cop-85R)           Adkyrfn (Cop-81R)           Subtle 1DN-g receptor-like protein (Cop-85R)           ER-located appotosis regulator (Cop-85R)           ER-located appotosis regulator (Cop-85R)           Bryothetical protein (Cop-81R)           Serrfln Kinsse: (Cop-812R)           Serrfln L23 (Cop-812R)           Serrfln L24 (Cop-6164)           L1 - bits netregeting (Cop-6164)  | A 57R<br>B1R<br>B2R<br>B4R<br>B5R<br>B6R<br>B7R<br>B5R<br>B9R<br>B10R<br>B11R<br>B11R<br>B11R<br>B14R<br>B15R<br>B16R  | CPXV195<br>CPXV196<br>CPXV197<br>CPXV197<br>CPXV199<br>CPXV200<br>CPXV200<br>CPXV201<br>CPXV201<br>CPXV203<br>CPXV204<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV206<br>CPXV206<br>CPXV206<br>CPXV206   | NoF1-18           NoF1-18           NoF1-18           NoF1-19   
                                       | 5 178867 179460<br>179610 180509<br>180579 182066<br>183507 182066<br>184149 185102<br>185201 184045<br>184149 185102<br>185201 185201<br>185201 185704<br>186774 186319<br>186761 187727<br>187727<br>188076 189581<br>187954 190817<br>199954 190817<br>199954 190817<br>199954 192528<br>192612 192528  | 594           900           1518           1686           954           300           546           801           738           1506           225           864           1035           450           978  | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  | 98.985<br>97.324<br>94.257<br>97.504<br>98.738<br>100<br>97.79<br>99.248<br>97.333<br>99.002<br>94.03<br>98.258<br>97.674<br>99.533   | No12-18         10006         1009           Na72-18         81005         18280           Na72-19         85280         18454           Na72-19         18546         1857           Na72-19         18546         1867           Na72-19         18546         1861           Na72-19         18546         1861           Na72-19         18546         1861           Na72-19         18545         1871           Na72-19         18763         18837           Na72-19         19037         1916           Na72-19         19037         1916           Na72-19         1915         1933           Na72-19         1915         1933           Na72-19         19135         1933           Na72-19         19357         1939           Na72-19         19357         1933           Na72-19         19351         1933           Na72-19         19351         1934   
   
   
   | 900<br>1518<br>1611<br>954<br>534<br>546<br>801<br>738<br>1506<br>225<br>864<br>1035<br>450<br>978   | (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)  | 98.328         Not           94.257         Not           94.454         Not           98.738         Not           98.738         Not           98.723         Not           97.238         Not           97.238         Not           99.002         Not           94.03         Not           98.955         Not           97.093         Not           97.093         Not           99.329         Not           96.333         Not   
   
  | bH1-186         1800           bH1-187         1810           bH1-188         1828           bH1-188         1828           bH1-181         1846           bH1-191         1856           bH1-191         1862           bH1-191         1862           bH1-192         1868           bH1-193         1876           bH1-194         1885           bH1-195         1901           bH1-195         1901           bH1-196         1904           bH1-197         193           bH1-198         1925           bH1-198         1925           bH1-198         1930           bH1-198         1930  
   
   | 11         118070         900           40         182557         1518           55         184528         1674           32         185585         954           484         186217         534           56         186901         546           55         187653         801           74         188411         738           75         190062         1506           44         190368         225           35         191298         864           44         190348         225           35         191298         864           94         192428         1035           91         194068         978  | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  
  | 98.328         94.257         9           98.211         9         9           98.738         9         9           98.324         9         9           97.238         9         9           97.333         9         9           99.002         9         9           94.03         9         9           94.03         9         9           97.093         9         9           99.329         9         9           96.933         9         9   
   | well-1-86         [79266]         [801)           well-1-87         [8025]         [817]           well-1-88         [8025]         [817]           well-1-89         [8374]         [8374]           well-1-91         [8400]         [8376]           well-1-92         [8401]         [8560]           well-1-93         [8596]         [877]           well-1-94         [8596]         [877]           well-1-94     
   [8597]         [904]           well-1-94         [8597]         [904]           well-1-94         [8959]         [904]           well-1-94         [9056]         [915]           well-1-94         [9057]         [9172]           well-1-94         [9172]         [9172]           well-1-94         [9172]         [9172]           well-1-94         [9172]         [9172]  | 5         900         (+           0         1518         (+           0         1677         (+           7         954         (+           9         537         (+           9         537         (+           2         555         (+           4         801         (+           3         678         (+           4         1506         (+           0         225         (+           6         870         (+           7         1035         (+           1         450         (+           5         981         (+  | +)         98,33           +)         96,22           +)         96,22           +)         96,22           +)         93,25           +)         93,25           +)         94,56           +)         96,88           +)         96,88           +)         99,20           +)         99,68           +)         99,68           +)         99,61           +)         99,33           +)         99,33           +)         99,535   | 35         SweH2           24         SweH2           28         SweH2           38         SweH2           46         SweH2           46         SweH2           55         SweH2           56         SweH2           57         SweH2           58         SweH2           59         SweH2           50         SweH2           512         SweH2           533         SweH2           546         SweH2           55         SweH2           56         SweH2           57         SweH2           58         SweH2           59         SweH2           50         SweL2     <   
  | 188         17841           186         17916           187         18012           188         18189           189         18367           190         18470           191         18528           192         18589           193         18677           194         18759           195         18918           196         18947           197         19043           198         19159           199         19159  
  | 2 180061<br>9 181646<br>0 183566<br>0 184623<br>9 185245<br>4 185838<br>0 186690<br>2 187449<br>5 189100<br>2 189406<br>3 190342<br>9 191473<br>7 192046  | 900<br>1518<br>1677<br>954<br>537<br>555<br>801<br>678<br>1506<br>225<br>870<br>1035<br>450<br>981   
  | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  | 96.238<br>97.317<br>98.423<br>93.296<br>94.565<br>98.872<br>96.889<br>99.202<br>94.03<br>98.616<br>97.093<br>98.658<br>95.399  |
| Cample kinse (Cop-85.8)<br>Senfar Kinse (Cop-B1R)<br>Schufer (Cop-B1R)<br>EX type-1 membrane glycoprotein, protective an tigen (Cop-85R)<br>EX type-1 membrane glycoprotein, protective an tigen (Cop-85R)<br>EX type-1 membrane glycoprotein, protective an tigen (Cop-85R)<br>Makyrinikke, protein (Cop-86R)<br>Schubel Type-1 (Cop-810R)<br>Exch-Bite, protein (Cop-810R)<br>Exch-Bite, protein (Cop-810R)<br>Sertifu F.J.a; Cop-RL2<br>Sertifu F.J.a; Cop-RL2<br>Hypothesial protein (Cop-811R)<br>Sertifu F.J.a; Cop-RL2<br>Hypothesial protein (Cop-816R)<br>L-1 beta tanibilation (Cop-817.0)   | A 57R<br>B1R<br>B2R<br>B4R<br>B5R<br>B6R<br>B7R<br>B7R<br>B7R<br>B7R<br>B7R<br>B10R<br>B11R<br>B14R<br>B14R<br>B15R<br>B16R<br>B17L  | CPXV195<br>CPXV196<br>CPXV197<br>CPXV197<br>CPXV199<br>CPXV199<br>CPXV200<br>CPXV201<br>CPXV202<br>CPXV202<br>CPXV204<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV20                      | NoF1-18           NoF1-18           NoF1-18           NoF1-19           NoF1-10           NoF1-10           NoF1-10   
   | 5 178867 179460<br>179610 180509<br>180259 182066<br>182360 184045<br>184045 184045<br>185201 185200<br>186371 185774 186319<br>186371 187171<br>187192 187929<br>188076 189581<br>189564 190817<br>5 189663 189887<br>189954 190817<br>5 190914 191948<br>192079 192528<br>192677 194659  | 394           900           1518           1686           954           300           546           801           738           1506           225           864           1005           450           978           1023   | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  | 98.985<br>97.324<br>94.257<br>97.504<br>98.738<br>100<br>97.79<br>99.228<br>99.002<br>94.03<br>99.002<br>94.03<br>98.258<br>97.674<br>99.333<br>98.258  | Nar2-18         S006         1009           Nar2-18         S1006         I839           Nar2-18         S208         I8494           Nar2-19         8258         I8494           Nar2-19         8566         I817           Nar2-19         8566         I817           Nar2-19         8566         I817           Nar2-19         88615         I816           Nar2-19         88615         I816           Nar2-19         9016         1033           Nar2-19         9016         1033           Nar2-19         9016         1033           Nar2-19         9017         1912           Nar2-19         9017         1912           Nar2-19         9017         1920           Nar2-19         9012         1921           Nar2-19         9012         1920           Nar2-19         9021         1920           Nar2-19         9021         1920           Nar2-19         905         1940           Nar2-20         1947         1947   
   
   
   | 900<br>1518<br>1611<br>954<br>534<br>546<br>801<br>738<br>1506<br>225<br>864<br>1035<br>450<br>978<br>1023   | (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)  | 98.328         Not           94.4257         Not           94.4257         Not           94.4257         Not           98.738         Not           98.738         Not           97.338         Not           97.238         Not           97.238         Not           97.333         Not           99.002         Not           99.002         Not           94.03         Not           98.955         Not           97.093         Not           96.923         Not           96.933         Not           96.933         Not   
   
  | bH1-186         1800           bH1-187         1810           bH1-188         1828           bH1-189         1846           bH1-191         1866           bH1-191         1862           bH1-191         1862           bH1-191         1862           bH1-191         1862           bH1-192         1868           bH1-193         1876           bH1-194         1885           bH1-195         1901           bH1-194         1885           bH1-195         1901           bH1-196         1904           bH1-197         1913           bH1-198         1925           bH1-198         1925           bH1-198         1925           bH1-190         1941           bH1-190         1941           bH1-190         1941           bH1-190         1941           bH1-190         1941   
   
   | 11         118070         900           40         182577         1518           55         184258         1558           55         18558         954           32         185585         954           33         185585         954           56         186001         546           53         187653         801           74         188411         738           73         190368         225           51         190208         864           94         192428         1035           58         19307         450           91         194068         978           16         195138         1023   | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  
  | 98.328         94.257         98.211         98.211         98.738         98.324         98.324         99.324         99.324         99.248         97.238         99.248         97.333         99.002         99.002         94.03         99.002         94.03         99.955         97.093         99.329         99.329         99.329         99.329         96.933         98.824 <th>well-1-88         19256         1901           well-1-88         18023         1817           well-1-88         18023         1817           well-1-88         1804         1836           well-1-88         18374         18374           well-1-98         18433         18374           well-1-91         18469         1875           well-1-92         18696         1877           well-1-92         18696         1877           well-1-93         18950         1917           well-1-94         18930         18957           well-1-95         189597         1944           well-1-94         18930         18957           well-1-95         19722         1921           well-1-96         19722         1921           well-1-98         19722         1921           well-1-98         19722         1922           well-1-98         19722         1922           well-1-98         19722         1922           well-1-98         19726         1932           well-1-98         19726         1932</th> <th><math display="block">\begin{array}{cccccccccccccccccccccccccccccccccccc</math></th> <th>+) 98.59<br/>+) 97.32<br/>+) 96.22<br/>+) 96.22<br/>+) 97.31<br/>+) 98.87<br/>+) 98.87<br/>+) 98.52<br/>+) 98.52<br/>+) 98.68<br/>+) 99.20<br/>+) 99.45<br/>+) 99.45<br/>+) 99.53<br/>+) 99.53<br/>+) 98.22<br/>+) 99.22<br/>+) 99.22<br/>+)</th> <th>35         SweH2           24         SweH2           28         SweH2           38         SweH2           38         SweH2           36         SweH2           36         SweH2           37         SweH2           36         SweH2           36         SweH2           36         SweH2           37         SweH2           38         SweH2           39         SweH2           30         SweH2           30         SweH2           30         SweH2           310         SweH2           32         SweH2           33         SweH2           34         SweH2           35         SweH2  </th> <th>188         17841           186         17916           187         18012           188         18189           189         18367           190         18470           191         18528           192         18589           193         18677           194         18799           195         18918           196         18947           197         19043           198         19159           199         19213           200         19315</th> <th>2 180061<br/>9 181646<br/>0 183566<br/>0 184623<br/>9 185245<br/>4 185838<br/>0 186690<br/>2 187449<br/>5 189100<br/>2 187449<br/>5 189100<br/>2 189406<br/>3 190342<br/>9 191473<br/>7 192046<br/>1 193111<br/>9 194181</th> <th>900<br/>1518<br/>1677<br/>954<br/>537<br/>555<br/>801<br/>678<br/>1506<br/>225<br/>870<br/>1035<br/>450<br/>981<br/>1023</th> <th>(+)           (+)</th> <th>96.238<br/>97.317<br/>98.423<br/>93.296<br/>94.565<br/>98.872<br/>96.889<br/>99.202<br/>94.03<br/>98.616<br/>97.093<br/>98.658<br/>95.399<br/>98.235</th>  
  | well-1-88         19256         1901           well-1-88         18023         1817           well-1-88         18023         1817           well-1-88         1804         1836           well-1-88         18374         18374           well-1-98         18433         18374           well-1-91         18469         1875           well-1-92         18696         1877           well-1-92         18696         1877           well-1-93         18950         1917           well-1-94         18930         18957           well-1-95         189597         1944           well-1-94         18930         18957           well-1-95         19722         1921           well-1-96         19722         1921           well-1-98         19722         1921           well-1-98         19722         1922           well-1-98         19722         1922           well-1-98         19722         1922           well-1-98         19726         1932           well-1-98         19726         1932   | $\begin{array}{cccccccccccccccccccccccccccccccccccc$  | +) 98.59<br>+) 97.32<br>+) 96.22<br>+) 96.22<br>+) 97.31<br>+) 98.87<br>+) 98.87<br>+) 98.52<br>+) 98.52<br>+) 98.68<br>+) 99.20<br>+) 99.45<br>+) 99.45<br>+) 99.53<br>+) 99.53<br>+) 98.22<br>+) 99.22<br>+) | 35         SweH2           24         SweH2           28         SweH2          
38         SweH2           38         SweH2           36         SweH2           36         SweH2           37         SweH2           36         SweH2           36         SweH2           36         SweH2           37         SweH2           38         SweH2           39         SweH2           30         SweH2           30         SweH2           30         SweH2           310         SweH2           32         SweH2           33         SweH2           34         SweH2           35         SweH2   | 188         17841           186         17916           187         18012           188         18189           189         18367           190         18470           191         18528           192         18589           193         18677           194         18799           195         18918           196         18947           197         19043           198         19159           199         19213           200         19315  
  | 2 180061<br>9 181646<br>0 183566<br>0 184623<br>9 185245<br>4 185838<br>0 186690<br>2 187449<br>5 189100<br>2 187449<br>5 189100<br>2 189406<br>3 190342<br>9 191473<br>7 192046<br>1 193111<br>9 194181   
  | 900<br>1518<br>1677<br>954<br>537<br>555<br>801<br>678<br>1506<br>225<br>870<br>1035<br>450<br>981<br>1023  | (+)             | 96.238<br>97.317<br>98.423<br>93.296<br>94.565<br>98.872<br>96.889<br>99.202<br>94.03<br>98.616<br>97.093<br>98.658<br>95.399<br>98.235  |
| Camphic kinss (Cop-ASSR)<br>Senther Kinss (Cop-BR)<br>Schlafen (Cop-BR)<br>Malynfn (Cop-BR)<br>EV type 1- menhane glycoprotein, protective an figen (Cop-BSR)<br>Malynfikeror, ER resident (Cop-BSR)<br>Subble IIN-q receptor-like protein (Cop-BSR)<br>Subble IIN-q receptor-like protein (Cop-BSR)<br>ER-locatient (Cop-BR)<br>ER-locatient (Cop-BR)<br>Hypothesical protein (Cop-BR)<br>Seriph 1.2; (Cop-SL)<br>Hypothesical protein (Cop-BIR)<br>E-1 beta receptor (Cop-BIR)<br>L-1 beta receptor (Cop-BIR)<br>L-1 beta receptor (Cop-BIR)<br>EL-1 beta receptor (Cop-BIR)   | A 57R<br>B1R<br>B2R<br>B4R<br>B5R<br>B5R<br>B5R<br>B7R<br>B7R<br>B7R<br>B1R<br>B1R<br>B12R<br>B12R<br>B12R<br>B15R<br>B17L<br>B15R   | CPXV195<br>CPXV196<br>CPXV197<br>CPXV197<br>CPXV197<br>CPXV197<br>CPXV201<br>CPXV201<br>CPXV201<br>CPXV201<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV20                      | NoF1-18           NoF1-18           NoF1-18           NoF1-19           NoF1-20           NoF1-20           NoF1-20   
   | 5 (178867) (179460)<br>(179610) (180509)<br>(180579) (182096)<br>(182360) (182360)<br>(182360) (182360)<br>(185201) (185200)<br>(185704) (186319)<br>(185704) (186319)<br>(186774) (186319)<br>(186774) (186319)<br>(186774) (186319)<br>(186774) (186319)<br>(186774) (186319)<br>(186774) (186319)<br>(186774) (186319)<br>(186774) (186319)<br>(186774) (186319)<br>(186784) (198784)<br>(186784) (198784)<br>(199014) (191948)<br>(199014) (191948)<br>(199014) (191948)<br>(194801) (196525)<br>(194801) (196525)   | 594           900           1518           1686           954           300           546           801           738           1506           225           864           1035           450           978           1023           1725  | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  | 98.985<br>97.324<br>94.257<br>97.504<br>98.738<br>100<br>97.79<br>99.248<br>97.333<br>99.002<br>94.03<br>98.258<br>97.674<br>99.329<br>98.235<br>97.674   | Nar2-161         2006         10399           Nar2-181         81006         10399           Nar2-181         81006         10399           Nar2-191         81540         18354           Nar2-191         81546         18354           Nar2-192         81541         18354           Nar2-192         81545         18165           Nar2-192         88515         18157           Nar2-195         88515         18157           Nar2-195         88519         19000           Nar2-196         91356         19237           Nar2-197         91355         19237           Nar2-200         93055         19303           Nar2-201         93055         19403           Nar2-201         93055         19403           Nar2-201         94075         19407           Nar2-201         94075         19407           Nar2-201         94075         19407  
   
   
   | 900<br>1518<br>1611<br>954<br>534<br>546<br>801<br>738<br>1506<br>225<br>864<br>1035<br>450<br>978<br>1023<br>1725   | (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)  | 98.328         Not           94.257         Not           94.454         Not           94.454         Not           98.738         Not           98.738         Not           99.248         Not           97.233         Not           99.002         Not           94.03         Not           98.955         Not           97.093         Not           99.329         Not           96.933         Not           98.824         Not           97.213         Not  
   
  | bH1-186         1800           bH1-187         1810           bH1-188         1826           bH1-188         1826           bH1-189         1836           bH1-190         1856           bH1-191         1862           bH1-192         1868           bH1-193         1876           bH1-194         1876           bH1-195         1901           bH1-196         1904           bH1-197         1913           bH1-198         1925           bH1-197         1913           bH1-198         1925           bH1-199         1930           bH1-200         1942           bH1-200         1942   
   
   | 11         118070         900           40         182557         1518           55         184528         1674           32         185585         954           48         186217         534           48         186217         534           56         186801         546           53         187653         801           74         188411         738           74         1894062         1506           44         190368         225           35         1912928         864           4912928         1035         58           58         193007         450           91         194068         978           80         197004         1725   | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  
  | 98.328         94.257         98.211         98.211         98.211         98.324         98.324         99.324         99.324         99.248         97.333         99.002         99.002         99.002         99.002         99.002         99.002         99.002         99.002         99.003         99.003         99.003         99.003         99.003         99.003         99.003         99.003         99.329         99.329         99.339         99.339         99.339         99.69.33         97.013         99.8824         97.213         97.2  
   | well-1.88         17256         1801           well-1.81         82031         1871           well-1.81         82031         836           well-1.83         83704         836           well-1.84         83704         836           well-1.91         8433         8333           well-1.91         8440         8394       
   well-1.91         84604         8894           well-1.92         8604         8894           well-1.93         8930         8957           well-1.94         8979         1944           well-1.94         9879         1944           well-1.94         1955         1957           well-1.94         1965         1972           well-1.94         1967         1972           well-1.94         1967         1972           well-1.94         1972         1921           well-1.94         1972         1922           well-1.94         1972         1922           well-1.94         1972         1922   | \$ 900         (+           1         1518         (+           0         1518         (+           0         1517         (+           9         357         (+           9         537         (+           2         555         (+           4         801         (+           3         678         (+           4         1506         (+           5         870         (+           6         870         (+           6         981         (+           5         981         (+           6         981         (+           1023         (-         1023           (+         1023         (+   | +)         9839840           +)         9732           +)         9732           +)         96325           +)         97314           +)         97314           +)         97314           +)         98375           +)         98375           +)         98388           +)         9840           +)         9840           +)         9920           +)         9932           +)         99334           +)         99332           +)         9932           -)         9822           -)         9822           +)         97050   | 35         Swelf2           24         Swelf2           24         Swelf2           28         Swelf2           28         Swelf2           28         Swelf2           28         Swelf2           26         Swelf2           25         Swelf2           26         Swelf2           27         Swelf2           28         Swelf2           29         Swelf2           20         Swelf2           20         Swelf2           210         Swelf2           210         Swelf2           210         Swelf2           210         Swelf2           211         Swelf2           212         Swelf2           213         Swelf2           214         Swelf2           215         Swelf2           216         Swelf2           217         Swelf2           218         Swelf2           219         Swelf2           216         Swelf2           217         Swelf2           218         Swelf2   
  | 188 17941<br>186 17916<br>187 18012<br>188 18189<br>188 18189<br>189 18367<br>190 18470<br>191 18528<br>192 18589<br>193 18677<br>194 18759<br>18918<br>196 18947<br>197 19043<br>198 19159<br>199 19213<br>200 19315<br>201 19432   
  | 2 180061<br>9 181646<br>0 183566<br>0 184623<br>9 185245<br>4 185838<br>0 186690<br>2 187449<br>5 189100<br>2 189406<br>3 190342<br>9 191473<br>7 192046<br>1 193111<br>9 194181<br>2 196046  | 900<br>1518<br>1677<br>954<br>537<br>555<br>801<br>678<br>1506<br>225<br>870<br>1035<br>981<br>1023<br>1725  
  | (+)             | 96.238<br>97.317<br>98.423<br>93.296<br>94.565<br>98.872<br>96.889<br>99.202<br>94.03<br>98.616<br>97.093<br>98.658<br>95.399<br>98.235<br>97.909  |
| Cample kinss (Cop-85.8)<br>Senfbr Kinss (Cop-81R)<br>Schuler (Cop-81R)<br>EX Type 1- methane glycopotein, protective an tigen (Cop-85R)<br>BZ Type 1- methane glycopotein, protective an tigen (Cop-85R)<br>Maiyrini & protein (Cop-86R)<br>Schule Type 2 (Cop-81R)<br>Schule Type 2 (Cop-81R)<br>Ex Availand a guodes regulator (Cop-85R)<br>Ex Availand a guodes regulator (Cop-85R)<br>Ex Availand a guodes regulator (Cop-85R)<br>Serfin L3, Cop-812R)<br>Serfin L3, Cop-812R)<br>Serfin L3, Cop-812R)<br>Hyndreckal protein (Cop-81R)<br>L-1 beta inhibitor (Cop-81R)<br>L-1 beta inhibitor (Cop-81R)<br>L-1 beta inhibitor (Cop-81R)<br>L-1 beta inhibitor (Cop-81R)<br>Hyndreckal protein (Cop-81R)<br>L-1 beta inhibitor (Cop-81R)<br>L-1 beta inhibitor (Cop-81R)   | A 57R<br>B1R<br>B2R<br>B4R<br>B5R<br>B6R<br>B7R<br>B5R<br>B9R<br>B11R<br>B12R<br>B14R<br>B14R<br>B15R<br>B17L<br>B18R<br>B17L<br>B18R  | CPXV195<br>CPXV196<br>CPXV197<br>CPXV197<br>CPXV199<br>CPXV199<br>CPXV209<br>CPXV201<br>CPXV201<br>CPXV202<br>CPXV204<br>CPXV204<br>CPXV204<br>CPXV204<br>CPXV205<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV20<br>CPXV209<br>CPXV209<br>CPXV209<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CPXV20<br>CP | NoF1-18           NoF1-18           NoF1-18           NoF1-19           NoF1-20           NoF1-20           NoF1-20           NoF1-20   
   | <ul> <li>178601</li> <li>179460</li> <li>179461</li> <li>179461</li> <li>180579</li> <li>18206</li> <li>184045</li> <li>18449</li> <li>185102</li> <li>185201</li> <li>185301</li> <li>185301</li></ul>  | 594           900           1518           1686           954           300           546           801           738           1506           225           864           1035           450           978           1023           1725           1098   | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  | 98.985<br>97.324<br>97.504<br>94.257<br>97.504<br>98.738<br>100<br>97.79<br>99.248<br>97.333<br>98.258<br>97.674<br>99.329<br>99.033<br>98.258<br>97.575<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>99.529<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97.59<br>97. | Mar 2: 65         2000           Mar 2: 68         2000           Mar 2: 88         28006           Bar 2: 80         28404           Mar 2: 80         84504           Mar 2: 90         85504           Mar 2: 90         85504           Mar 2: 91         85646           Mar 2: 92         85718           Mar 2: 92         85736           Mar 2: 94         87566           Mar 2: 94         87566           Mar 2: 94         87566           Mar 2: 94         9756           Mar 2: 94         9756           Mar 2: 94         9756           Mar 2: 94         9756           Mar 2: 94         9755           Mar 2: 94         9755           Mar 2: 94         9755           Mar 2: 94         9755           Mar 2: 94         9751           Mar 2: 94         9752           Mar 2: 94         9752           Mar 2: 9528         9958           Mar 2: 965         9958           Mar 2: 965         9958           9872         9859   
   
   | 900<br>1518<br>1611<br>954<br>544<br>546<br>801<br>738<br>1506<br>225<br>864<br>1035<br>450<br>978<br>1023<br>1725<br>1098  
  | (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)  | 98.328         Na           94.257         No           94.454         Na           94.354         Na           98.324         Na           98.324         Na           99.248         Na           99.248         Na           99.248         Na           99.020         Na           99.002         Na           97.333         Na           97.939         Na           99.209         Na           96.933         Na           98.254         Na           98.244         Na           97.133         Na           99.229         Na           99.221         Na           99.222         Na           99.224         Na           99.225         Na           91.203         Na           91.205         Na   
   
  | bH1-186         1800           bH1-187         1810           bH1-188         1822           bH1-188         1823           bH1-181         1823           bH1-181         1824           bH1-181         1824           bH1-191         1856           bH1-192         1868           bH1-194         1885           bH1-194         1885           bH1-194         1930           bH1-195         1941           bH1-196         1942           bH1-197         1913           bH1-198         1925           bH1-199         1930           bH1-199         1930           bH1-20         1970  
   
   | 11         180970         900           11         182577         1518           155         184528         1674           12         185858         954           48         186217         554           56         186801         546           53         187653         801           54         18002         1506           51         187653         801           51         190062         1506           53         191298         843           54         190062         1506           58         192007         450           94         192428         1035           58         193007         450           91         194068         978           16         195138         1023           80         197004         1725           31         198120         1003  | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)   | 98.328         94.257         9           98.211         9         9         9           98.738         9         9         9           98.324         9         9         9           97.238         9         9         9           99.248         9         9         9         
 99.002         9         9         9           94.03         9         9         9           99.002         9         9         9           99.002         9         9         9           99.003         9         9         9           99.004         9         9         9           99.005         9         9         9           99.329         9         9         9           99.824         9         9         9           99.824         9         9         9           99.824         9         9         9           91.803         9         9         9  
   | well-1.88         179256         18015           well-1.87         18025         1817           well-1.88         18025         1817           well-1.88         18374         1847           well-1.91         18430         18374           well-1.91         18454         18374           well-1.91         18463         1839           well-1.91         18463         1839           well-1.91         18463         1839           well-1.91         18464         1889           well-1.92         18936         18937           well-1.94         18719         18922           well-1.94         1971         1921           well-1.97         19053         1915           well-1.97         19053         1915           well-1.97         19053         1915           well-1.97         19053         1915           well-1.92         1923         1915           well-1.92         1923         1913           well-1.94         1924         19437           well-1.94         19447         19447  
  | 5         900         (4)           0         1518         (4)           0         1518         (4)           0         1517         (4)           0         1577         (4)           9         537         (4)           2         555         (4)           4         801         (4)           3         678         (4)           4         1506         (4)           5         870         (4)           6         981         (4)           5         981         (4)           5         981         (4)           5         981         (4)           5         1023         (-)           6         1023         (-)           7         1038         (4) | $\begin{array}{l} +) & = 88.98 \pm 0.01 \\ +) & = 97.33 \pm 0.01 \\ +) & = 98.85 \pm 0.01 \\ +) & = 98.85 \pm 0.01 \\ +) & = 99.40 \\ +) & = 99.4$  | 35         Swelf2           24         Swelf2           24         Swelf2           28         Swelf2           38         Swelf2           38         Swelf2           36         Swelf2           36         Swelf2           25         Swelf2           26         Swelf2           27         Swelf2           28         Swelf2           29         Swelf2           36         Swelf2           37         Swelf2           38         Swelf2           38         Swelf2           39         Swelf2           36         Swelf2           37         Swelf2           38         Swelf2           39         Swelf2           30         Swelf2           36         Swelf2           37         Swelf2           38         Swelf2           39   
   | 188 17941<br>186 17916<br>187 18012<br>188 18189<br>188 18189<br>189 18367<br>190 18470<br>191 18528<br>192 18589<br>193 18677<br>194 18759<br>195 18918<br>196 18947<br>197 19043<br>198 19159<br>199 19213<br>200 19315<br>201 19432<br>202 19606   
   | 2 180061<br>9 181646<br>0 183566<br>0 184623<br>9 185245<br>4 185388<br>0 186690<br>2 18749<br>5 189100<br>2 189406<br>3 190342<br>9 191473<br>7 192046<br>1 193111<br>9 194181<br>2 196046<br>5 197162   | 900<br>1518<br>1677<br>954<br>537<br>555<br>801<br>678<br>1506<br>225<br>870<br>1035<br>450<br>981<br>1023<br>1725<br>1098  | (+)             | 96.238<br>97.317<br>98.423<br>93.296<br>94.565<br>98.872<br>96.889<br>99.202<br>94.03<br>98.616<br>97.093<br>98.616<br>95.399<br>98.235<br>95.399<br>98.235<br>97.909   
  |
| Cample kinss (Cop-ASSR)<br>Schlafen (Cop-BIR)<br>Schlafen (Cop-BIR)<br>Schlafen (Cop-BIR)<br>EV type-1 menhane glycoprotein, protective an figen (Cop-BSR)<br>Maly drink kine protein (Cop-BSR)<br>Schlafe 1DV gr. crectpor-like protein (Cop-BSR)<br>Schlafe 1DV gr. crectpor-like protein (Cop-BSR)<br>ER-localized apoptosis regulator (Cop-BSR)<br>ER-localized in the regulator (Cop-BIR)<br>ER-localized in the regulator (Cop-BIR)<br>L-1 beta interceptor (Cop-BI6R)<br>L-1 beta inhibitor (Cop-BIR)<br>EN-labibate a receptor (Cop-BI9R)<br>EN-labibate arceptor (ER)<br>EN-localized ER)<br>EN-localized ER)   | A 57R<br>B1R<br>B2R<br>B4R<br>B4R<br>B4R<br>B7R<br>B7R<br>B7R<br>B10R<br>B11R<br>B10R<br>B11R<br>B15R<br>B15R<br>B16R<br>B17L<br>B15R<br>B19R<br>B19R  | CPXV195<br>CPXV196<br>CPXV197<br>CPXV197<br>CPXV197<br>CPXV201<br>CPXV201<br>CPXV201<br>CPXV201<br>CPXV202<br>CPXV201<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV20                      | NoF1-18<br>NoF1-18<br>NoF1-18<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-10<br>NoF1-20<br>NoF1-20<br>NoF1-20   
   | <ol> <li>178401 (17940)</li> <li>179401 (18059)</li> <li>179401 (18059)</li> <li>180579 (18206)</li> <li>182560 (184045)</li> <li>182560 (184045)</li> <li>185520 (18550)</li> <li>185571 (186319)</li> <li>185571 (18571)</li> <li>185571 (18571)</li> <li>185571 (18771)</li> <li>185771 (18771)</li> <li>18576 (18581)</li> <li>185675 (18585)</li> <li>185675 (18585)</li> <li>185675 (18585)</li> <li>185675 (19585)</li> <li>185675 (19585)</li> <li>185675 (19585)</li> <li>185675 (19585)</li> <li>185675 (19585)</li> <li>185675 (19585)</li> <li>19564 (19687)</li> <li>19575 (19585)</li> <li>19564 (19581)</li> <li>19575 (19587)</li> <li>19581 (19581)</li> <li>19555 (19584)</li> <li>19561 (19561)</li> <li>19565 (19561)</li> <li>19564 (19561)</li> <li>19565 (19561)</li> <li>19564 (19561)</li> <li>19565 (19561)</li> <li>19564 (19561)</li> <li>19565 (19561)</li> <li>19564 (19561)</li> <li>19565 (1956</li></ol>   | 594           900           1518           1686           954           300           546           801           738           1506           225           864           1025           450           978           1023           1725           1095   | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  | 98.985<br>97.324<br>94.257<br>97.504<br>98.738<br>100<br>97.79<br>99.248<br>97.333<br>99.002<br>94.03<br>99.403<br>99.403<br>99.403<br>99.633<br>99.633<br>99.633<br>99.633<br>99.5387<br>92.077<br>92.55   | Na12-21         10006         10399           Na12-181         80106         10399           Na12-181         81106         10399           Na12-181         81206         10349           Na12-191         84540         18545           Na12-191         84541         18545           Na12-192         8451         18161           Na12-192         8451         18161           Na12-193         8451         18161           Na12-194         8451         18161           Na12-195         8451         18161           Na12-195         8451         19100           Na12-197         19156         1923           Na12-197         19136         1923           Na12-197         19136         1923           Na12-197         1923         19403           Na12-201         19935         19437           Na12-201         19935         19437           Na12-201         19935         19438           Na12-201         19935         19441   
   
   
  | 900<br>1518<br>1611<br>954<br>534<br>546<br>801<br>738<br>1506<br>225<br>864<br>1035<br>450<br>978<br>1023<br>1725<br>1098<br>2382   | (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)  | 98.328         No           94.257         No           94.454         No           98.738         No           98.324         No           97.338         No           99.248         No           99.230         No           99.248         No           99.202         No           99.233         No           99.248         No           99.250         No           99.250         No           99.529         No           96.333         No           99.529         No           97.213         No           91.801         No           88.552         No  
   
   | bH1-186         [1800           bH1-187         [1810           bH1-188         [1826           bH1-189         [1846           bH1-189         [1846           bH1-189         [1846           bH1-190         [1856           bH1-191         [1876           bH1-192         [1868           bH1-193         [1876           bH1-194         [1885           bH1-195         [1901           bH1-194         [1885           bH1-195         [1901           bH1-196         [1904           bH1-197         [1913           bH1-198         [1904           bH1-199         [1900           bH1-199         [1900           bH1-190         [1912           bH1-191         [1912           bH1-192         [1912           bH1-193         [1912           bH1-201         [1912           bH1-201         [1912           bH1-201         [1912   
   
  | 11         118070         900           45         154228         1518           15         154528         1674           12         185858         954           15         15858         954           15         15858         954           16         5186801         546           53         187653         801           74         188411         738           75         190062         1506           44         190368         225           35         1919062         1506           44         190368         225           35         1919070         450           91         194068         978           91         194068         978           80         197004         1725           31         19120         1098           80         197004         1725           32         198120         1082           82         200663         2382  | (+)            
   | 98.328         94.257         9           98.211         9         98.211         9           98.738         9         98.324         9           98.324         9         9         9           97.238         9         99.248         9           99.002         9         99.403         9           99.002         9         94.03         9           99.012         9         99.329         9           99.329         9         98.824         9           99.021         9         98.824         9           97.213         9         91.803         9   
  | well-1.82         17256         18017           well-1.83         820.31         181.41           well-1.84         820.31         181.41           well-1.84         820.31         183.42           well-1.84         820.31         83.73           well-1.94         83.63         183.73           well-1.91         85.83         83.74           well-1.92         85.93         183.74           well-1.94         85.96         185.75           well-1.94         85.96         185.75           well-1.94         199.76         191.75           well-1.94         199.76         191.75           well-1.94         199.79         190.25           well-1.94         199.79         190.25           well-1.94         199.79         190.25           well-1.94         190.72         192.72           well-1.94         190.72         192.72           well-1.94         190.74         193.74           well-1.94         190.74         193.74           well-1.94         193.74         193.74   
   | \$ 900         (4)           1518         (4)           0         1518         (4)           0         1518         (4)           0         1577         (4)           9         537         (4)           9         537         (4)           8         618         (4)           8         678         (4)           10         2225         (4)           4         1506         (4)           10         2225         (4)           6         870         (4)           1         450         (4)           5         981         (4)           5         981         (4)           1         1725         (4)           2403         (4)         2403            | $\begin{array}{l} +) & 98.98 + 0 \\ +) & 97.33 + 0 \\ +) & 97.31 + 0 \\ +) & 98.73 + 0 \\ +) & 98.73 + 0 \\ +) & 98.73 + 0 \\ +) & 98.83 + 0 \\ +) & 99.84 + 0 \\$   | SS         Swelf2           24         Swelf2           24         Swelf2           24         Swelf2           28         Swelf2           27         Swelf2           28         Swelf2           28         Swelf2           29         Swelf2           20         Swelf2           212         Swelf2           22         Swelf2           23         Swelf2           24         Swelf2           25         Swelf2           26         Swelf2           27         Swelf2           28         Swelf2           29         Swelf2           29         Swelf2           29         Swelf2           215         Swelf2           22         Swelf2           23         Swelf2           24         Swelf2           25         Swelf2           26         Swelf2           27         Swelf2           28         Swelf2  
   | 188         17841           -186         17916           -187         18012           -188         1889           -188         1889           -189         18367           -190         18470           -191         18528           -192         18589           -193         18677           -194         18759           -195         18918           -196         18947           -197         19043           -198         19199           -199         19213           -199         19213           -200         19315           -201         19432           -202         206066           -203         19722  
   | 2 180061<br>9 181646<br>0 183566<br>0 184623<br>9 185245<br>4 185838<br>0 186690<br>2 187449<br>5 189100<br>2 189406<br>3 190342<br>9 191473<br>7 192046<br>1 193111<br>9 194181<br>2 196046<br>5 197162<br>4 199626  | 900           1518           1677           954           537           555           801           678           1506           225           870           1035           450           981           1023           1725           1098           2403   | (+)           (+)           (+)           (+)           (+)           (+)           (+)          
(+)           (+)           (+)           (+)           (+)           (+)           (+)           (+)           (+)           (+)           (+)           (+)           (+)           (+)           (+)           (+)           (+)           (+)   | 96.238<br>97.317<br>98.423<br>93.296<br>94.565<br>98.872<br>96.889<br>99.202<br>94.03<br>98.616<br>97.093<br>98.616<br>97.093<br>98.638<br>95.399<br>98.235<br>97.909<br>94.809<br>96.02   |
| Cample kinss (Cop-ASSR)<br>Schlafen (Cop-BR)<br>Schlafen (Cop-BR)<br>Del Syrpe-1 meihane glycopotein, protective an tigen (Cop-BSR)<br>Malyrini (Cop-BR)<br>ESV type-1 meihane glycopotein, protective an tigen (Cop-BSR)<br>Malyrini Bar protein (Cop-BR)<br>Schlafe 1PN-g receptor-like protein (Cop-BSR)<br>ER-localized gatopotis regulator (Cop-BSR)<br>ER-localized gatopotis (Cop-BSR)<br>ER-localized gatopotis (Cop-BSR)<br>ER-localized gatopotis (Cop-BSR)<br>L-l beat inhibitor (Cop-BSR)<br>L-l beat neither (Cop-BSR)<br>ER-localized gatopotis (Cop-BSR)  | A 57R<br>B1R<br>B2R<br>B4R<br>B5R<br>B5R<br>B5R<br>B5R<br>B5R<br>B108<br>B118<br>B128<br>B148<br>B15R<br>B15R<br>B15R<br>B15R<br>B15R<br>B15R<br>B15R<br>B15R  | CPXV195<br>CPXV196<br>CPXV197<br>CPXV197<br>CPXV198<br>CPXV209<br>CPXV201<br>CPXV201<br>CPXV201<br>CPXV204<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV20                      | NoF1-18<br>NoF1-18<br>NoF1-18<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-20<br>NoF1-20  | 17860         179460           17960         18059           18791         18206           18226         18405           18236         18405           18410         185102           185301         185301           185301         185301           185301         185301           186371         187171           186371         187192           18963         189854           18964         199851           199071         19225           192072         19237           194501         194501           194501         194501           194501         194501           194501         194501   
  | 594           900           1518           1686           954           300           546           801           738           1506           225           1023           1725           1098           2358   | (+)             | 98385<br>97.324<br>97.324<br>98.738<br>100<br>97.79<br>99.248<br>99.002<br>94.03<br>99.002<br>94.03<br>99.002<br>94.03<br>99.654<br>99.329<br>96.333<br>98.255  | Na12-161         2006         1899-           Na12-161         80066         1899-           Na12-181         81006         1839-           Na12-181         8208         18440           Na12-191         85564         1857           Na12-191         85564         1857           Na12-192         85765         1887           Na12-194         87566         1887           Na12-194         87566         1887           Na12-194         87566         1887           Na12-194         87566         1887           Na12-194         91057         1912           Na12-205         90157         1912           Na12-204         90157         1920           Na12-201         94017         19140           Na12-201         94017         19140           Na12-201         94018         10522           Na12-2014         94141         20522  
   
   | 900<br>1518<br>1611<br>954<br>534<br>546<br>801<br>738<br>1506<br>225<br>864<br>1035<br>450<br>978<br>1023<br>1725<br>1098<br>2382  
  | (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)  | 98.228         No.           94.257         No.           94.257         No.           94.254         No.           98.738         No.           98.238         No.           98.2454         No.           99.248         No.           99.248         No.           99.248         No.           99.020         No.           94.03         No.           96.955         No.           96.933         No.           96.933         No.           97.213         No.           97.213         No.           97.213         No.           97.213         No.           97.213         No.           97.213         No.           97.214         No.           97.215         No.  
   
  | h11.186         1800           h11.187         1810           h11.188         1826           h11.188         1826           h11.189         1846           h11.189         1846           h11.189         1846           h11.191         1862           h11.191         1862           h11.191         1862           h11.192         1863           h11.193         1876           h11.194         1885           h11.195         1901           h11.197         1913           h11.198         1925           h11.199         1925           h11.199         1930           h11.190         1930           h11.201         1952           h11.201         1952           h11.202         1970           h11.203         1981   
   
   | 11         180970         900           11         180970         900           18         18257         1518           55         184528         1674           52         185858         954           48         186217         534           56         186801         546           53         1876763         801           54         190062         1596           41         190368         225           58         19209         864           94         192428         1035           58         193074         500           91         194068         978           16         195138         1023           23         198704         10725           23         198705         1068           22         20653         2382           0x063         2382         0x063   | (+)            | 98.328         94.257         9           98.211         9         98.211         9           98.734         9         98.734         9           97.238         9         99.002         9           99.002         9         99.002         9           94.03         9         99.002         9          
99.024         9         99.329         9           99.329         9         99.329         9           99.329         9         98.824         9           91.803         9         9.552         9   
  | well-1:88         17256         50117           well-1:81         852014         8356           well-1:81         852014         8356           well-1:81         83704         84774           well-1:81         8374         84774           well-1:81         8374         8474           well-1:81         8374         8474           well-1:91         8456         8596           well-1:92         8656         1877           well-1:94         8596         1877           well-1:94         8596         1877           well-1:94         8597         19045           well-1:94         19379         19045           well-1:94         19379         19045           well-1:94         19379         19045           well-1:94         19379         19045           well-1:94         19374         19147           well-1:94         19344         19147           well-1:94         19447         19172           well-1:94         19347         19447           well-1:94         19374         19447           well-1:94         19374         19474  
   | $\begin{array}{cccccccccccccccccccccccccccccccccccc$  | $\begin{array}{l} +) & = 88.98 + 0 \\ +) & = 98.78 + 0 \\ +) & = 96.22 \\ +) & = 97.31 + 0 \\ +) & = 98.73 + 0 \\ +) & = 98.73 + 0 \\ +) & = 98.73 + 0 \\ +) & = 98.73 + 0 \\ +) & = 98.73 + 0 \\ +) & = 98.73 + 0 \\ +) & = 99.74 + 0 \\ +) & = 99.$  | SS         SweH2           X4         SweH2           X4         SweH2           X4         SweH2           X8         SweH2           X7         SweH2           X8         SweH2           X8         SweH2           X8         SweH2           X9         SweH2  
   | 188         17841           186         17916           187         18012           188         1889           188         1889           189         18367           190         18470           191         18528           192         18589           193         18677           194         18759           195         18918           196         18947           197         19043           198         19159           199         19213           200         19315           201         19432           202         19606           203         19722   
   | 2 180061<br>9 181646<br>0 183566<br>0 184623<br>9 185245<br>4 185838<br>0 186602<br>2 187449<br>2 187449<br>2 187449<br>2 187449<br>2 189406<br>3 190342<br>9 191473<br>7 192046<br>1 193111<br>9 194181<br>2 196046<br>5 197162<br>4 199626  | 900           1518           1677           954           537           537           555           801           678           1506           225           870           1035           981           1023           1725           1098           2403   | (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)   | 96.238<br>97.317<br>98.423<br>93.296<br>94.565<br>98.872<br>96.889<br>99.202<br>94.03<br>98.616<br>97.093<br>98.658<br>95.399<br>98.235<br>97.909<br>94.809<br>96.02  
  |
| Cample kinse (Cop-85.8)<br>Sentifier Kinser (Cop-81R)<br>Sehthen (Cop-81R)<br>Sehthen (Cop-81R)<br>EX type-1 membrane glycoprotein, protective an tigen (Cop-85R)<br>Malyrini kike protein (Cop-86R)<br>Wintener, ER resident (Cop-87R)<br>Sehthe ITN-g receptor-like protein (Cop-88R)<br>ER beschlerd approtein (Cop-81R)<br>Section 10, 20, 20, 20, 20, 20, 20, 20, 20, 20, 2   | A 57R<br>B1R<br>B2R<br>B4R<br>B5R<br>B5R<br>B5R<br>B7R<br>B5R<br>B10R<br>B11R<br>B11R<br>B12R<br>B15R<br>B15R<br>B15R<br>B15R<br>B15R<br>B15R<br>B15R<br>B15R<br>B15R<br>B15R<br>B15R<br>B15R<br>B16R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R  | CPXV195<br>CPXV196<br>CPXV197<br>CPXV197<br>CPXV197<br>CPXV197<br>CPXV201<br>CPXV201<br>CPXV201<br>CPXV201<br>CPXV201<br>CPXV203<br>CPXV203<br>CPXV203<br>CPXV204<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV20                      |
NoF1-18<br>NoF1-18<br>NoF1-18<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NOF1-20<br>NOF1-20<br>NOF1-20<br>NOF1-20<br>NOF1-20<br>NOF1-20<br>NOF1-20<br>NOF1-20<br>NOF1-20<br>NOF1-20<br>NOF1-20<br>NOF1-20<br>NOF1-20<br>NOF1-20<br>NOF1-20<br>NOF1-20<br>NOF1-20<br>NOF1-20<br>NOF1-20<br>NOF1-20<br>NOF1-2 | 1788-01         1794-00           1795-01         1794-00           1795-01         1805-91           1805-791         182-00           1825-01         1855-00           1835-01         1855-00           1852-01         1855-00           1852-01         1855-00           1852-01         1855-00           1852-01         1855-00           1852-01         1855-00           1857-01         1857-00           1857-01         1857-00           1857-01         1857-00           1857-01         1857-00           1859-01         1858-00           1959-01         1958-00           1959-01         1952-00           1952-01         1952-00           1953-01         1945-00           1954-00         1954-00           1955-00         1954-00           1954-00         1954-00           1954-00         1954-00           1954-00         1954-00           1954-00         1954-00           1954-00         1954-00           1954-00         1954-00           1954-00         1954-00           1954-00         <  | 594           900           1518           1686           954           300           546           801           738           1506           225           864           1003           978           1023           1725           1098           2358           1674   | (+)             | 98/98/<br>97.324<br>97.324<br>94.257<br>97.504<br>98.738<br>97.79<br>99.233<br>99.002<br>94.03<br>99.002<br>94.03<br>98.258<br>97.674<br>99.633<br>98.235<br>97.387<br>92.007<br>89.25<br>97.846   
  | No12-161         2000         1000           Na72-161         81005         1859           Na72-181         81005         1859           Na72-181         81005         1859           Na72-191         8556         6817           Na72-191         8556         6817           Na72-191         8556         6817           Na72-191         8556         6817           Na72-192         88518         18761           Na72-193         89159         19020           Na72-194         89159         19020           Na72-195         89159         19020           Na72-196         98158         18761           Na72-197         98231         19016           Na72-108         99155         19021           Na72-208         99155         19021           Na72-208         99155         19088           Na72-208         99085         19088           Na72-208         99142         19088           Na72-208         99142         19088           Na72-208         190474         19018           Na72-208         190474         19018           Na72-208         190474   
   
  | 900<br>1611<br>1611<br>954<br>546<br>801<br>738<br>1506<br>225<br>254<br>1035<br>450<br>978<br>1023<br>1725<br>1098<br>2382<br>1674  | (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)  | 98.328 No.<br>94.257 No.<br>94.545 No.<br>98.338 No.<br>98.324 No.<br>97.338 No.<br>97.333 No.<br>97.333 No.<br>97.333 No.<br>97.333 No.<br>97.020 No.<br>99.024 No.<br>94.03 No.<br>98.955 No.<br>96.933 No.<br>98.834 No.<br>98.834 No.<br>97.213 No.<br>97.203 No.<br>9   
   
   | bH1-186         [1800           bH1-187         [1810           bH1-187         [1826           bH1-188         [1826           bH1-189         [1846           bH1-189         [1846           bH1-189         [1846           bH1-191         [1856           bH1-192         [1866           bH1-193         [1876           bH1-194         [1885           bH1-195         [1910           bH1-196         [1940           bH1-197         [1930           bH1-198         [1925           bH1-199         [1930           bH1-199         [1930           bH1-199         [1930           bH1-201         [1932           bH1-201   
   
  | 11         1180970         900           11         180970         900           18252         1674         321           35         1845285         954           32         185585         954           32         185585         954           32         185585         954           32         185585         956           35         191500         541           35         187633         801           74         188411         738           35         191298         864           4190268         225           36         192298         1035           36         192498         1045           37         190468         978           38         1927004         450           391         194068         978           302         200563         2322           05040         2782           0200562         23242           046         978           050         2320           050         2322           0563         2322           0564         2023424  | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)   
   | 98.328         94.257         9           98.211         9         98.211         9           98.738         9         98.224         9           98.324         9         9         9           99.324         9         9         9           99.002         9         9         9           94.03         9         99.002         9           99.002         9         9         9           99.002         9         9         9           99.003         9         99.329         9           90.533         9         99.329         9           96.933         9         9.248         9           91.803         9         9.552         9           94.03         9         9.552         9           95.552         9         9.552         9           96,409         9         4         9   
  | well-188         17256         8011           well-188         82014         8365           well-188         82014         8364           well-188         82014         8364           well-188         83794         8474           well-198         83784         8474           well-191         84538         85374          
well-191         84536         8577           well-191         84566         8577           well-193         85656         8577           well-193         85656         8577           well-194         86566         8577           well-194         86566         8577           well-194         9656         9577           well-194         9657         9636           well-194         9617         9226           well-194         9617         9617           well-201         96474         9617           well-201         96474         9617           well-202         96375         96375  | $ \begin{array}{cccccccccccccccccccccccccccccccccccc$   | +) $983984$<br>+) $973332$<br>+) $96223$<br>+) $973334$<br>+) $96223$<br>+) $97334$<br>+) $982734$<br>+) $98324$<br>+) $98324$<br>+) $98324$<br>+) $98324$<br>+) $98324$<br>+) $98324$<br>+) $98324$<br>+) $993234$<br>+) $99324$<br>+)   | SS         SweH2           X4         SweH2           X4         SweH2           X8         SweH2           X7         SweH2           X8         SweH2           X8         SweH2           X8         SweH2           X8         SweH2           X9         SweH2 <th>188 17841<br/>186 17916<br/>187 18012<br/>188 18189<br/>189 18367<br/>190 18470<br/>191 18528<br/>192 18589<br/>193 18677<br/>194 18759<br/>195 18918<br/>196 18947<br/>197 19043<br/>200 19315<br/>201 19432<br/>202 19606<br/>203 19722<br/>204 19972</th> <th>2 180061<br/>9 181646<br/>0 183566<br/>0 184623<br/>9 18264<br/>9 18245<br/>4 185838<br/>0 186690<br/>2 187449<br/>5 189100<br/>2 187449<br/>5 189100<br/>2 187449<br/>3 190342<br/>9 191473<br/>7 192046<br/>3 190342<br/>9 191473<br/>7 192046<br/>5 197162<br/>4 199626</th> <th>900<br/>1518<br/>1677<br/>954<br/>537<br/>555<br/>801<br/>678<br/>1506<br/>225<br/>870<br/>1035<br/>450<br/>981<br/>1023<br/>1725<br/>1098<br/>2403<br/>1674</th> <th>(+)           (+)</th> <th>96.238<br/>97.317<br/>98.423<br/>93.296<br/>94.565<br/>98.872<br/>96.889<br/>99.202<br/>94.03<br/>96.616<br/>97.093<br/>98.616<br/>97.093<br/>98.658<br/>95.399<br/>98.235<br/>97.909<br/>94.809<br/>96.02</th>  
  | 188 17841<br>186 17916<br>187 18012<br>188 18189<br>189 18367<br>190 18470<br>191 18528<br>192 18589<br>193 18677<br>194 18759<br>195 18918<br>196 18947<br>197 19043<br>200 19315<br>201 19432<br>202 19606<br>203 19722<br>204 19972   
  | 2 180061<br>9 181646<br>0 183566<br>0 184623<br>9 18264<br>9 18245<br>4 185838<br>0 186690<br>2 187449<br>5 189100<br>2 187449<br>5 189100<br>2 187449<br>3 190342<br>9 191473<br>7 192046<br>3 190342<br>9 191473<br>7 192046<br>5 197162<br>4 199626  | 900<br>1518<br>1677<br>954<br>537<br>555<br>801<br>678<br>1506<br>225<br>870<br>1035<br>450<br>981<br>1023<br>1725<br>1098<br>2403<br>1674  | (+)             | 96.238<br>97.317<br>98.423<br>93.296<br>94.565<br>98.872<br>96.889<br>99.202<br>94.03<br>96.616<br>97.093<br>98.616<br>97.093<br>98.658<br>95.399<br>98.235<br>97.909<br>94.809<br>96.02   
   |
| Cample kinss (Cop-A5.5R)<br>Schlafen (Cop-B1R)<br>Schlafen (Cop-B1R)<br>EX hysrin (Cop-B1R)<br>EX type-1 meihane glycopotein, protective an tigen (Cop-B5R)<br>Matyrinikker, RET schlafen (Cop-B5R)<br>EX type-1 meihane glycopotein, protective an tigen (Cop-B5R)<br>Matyrinikker, RET schlafen (Cop-B5R)<br>EX hysrine (Cop-B1R)<br>EX hysrine (Cop-B1R)<br>EX hysrine (Cop-B1R)<br>Sergin L23 (Cop-R21)<br>Explosition (Cop-B1R)<br>Explosition (Cop-B1R)<br>Explosition (Cop-B1R)<br>Explosition (Cop-B1R)<br>L-1 beta inhibitor (Cop-B1R)<br>L-1 beta receptor (Cop-B1R)<br>L-1 beta receptor (Cop-B1R)<br>Explosition (Cop-B1R)<br>L-1 beta receptor (Cop-B1R)<br>L-1 beta receptor (Cop-B1R)<br>Explosition (Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>(Cop-B1R)<br>( | A 57R<br>B1R<br>B2R<br>B4R<br>B5R<br>B5R<br>B7R<br>B5R<br>B1R<br>B1R<br>B12R<br>B14R<br>B15R<br>B15R<br>B16R<br>B17L<br>B15R<br>B17L<br>B15R<br>B17L<br>B15R<br>B17L<br>B15R<br>B16R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R<br>B17R | CPXV195<br>CPXV196<br>CPXV197<br>CPXV197<br>CPXV198<br>CPXV207<br>CPXV201<br>CPXV201<br>CPXV201<br>CPXV203<br>CPXV204<br>CPXV204<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV20                      | NoF1-18<br>NoF1-18<br>NoF1-18<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-10<br>NoF1-20<br>NoF1-20   
   | 17860         179400           179101         179400           179101         18079           180791         12306           18129         18109           18129         18109           18129         18109           18129         18109           18129         18109           185301         185301           18571         181711           187192         18772           189961         19887           199071         19239           199071         19239           199071         19459           199071         19459           199071         19459           199071         19459           199071         19459           199071         19459           199071         19459           199071         19459           199071         19459           199071         19459           199071         19459           199071         19459           199071         19459           199071         19459           199071         19459           199071         19459  | 594           900           1518           1686           954           300           546           801           738           1508           225           864           1035           450           978           1023           1725           1098           1074  | (+)             | 98985<br>97.324<br>97.324<br>97.504<br>100<br>97.79<br>97.238<br>97.79<br>99.248<br>97.338<br>99.002<br>94.03<br>99.002<br>94.03<br>99.002<br>94.03<br>97.574<br>99.329<br>99.329<br>97.387<br>92.077<br>89.25<br>97.387  | Na12-161         80006         8059-           Na12-181         801065         8059-           Na12-181         810165         8153-           Na12-181         810165         8153-           Na12-181         8250         8144           Na12-191         85564         8817           Na12-191         85664         8817           Na12-191         85664         8817           Na12-191         85766         18837           Na12-194         87566         18837           Na12-194         91576         19328           Na12-194         91571         19326           Na12-205         90587         19325           Na12-204         9552         19368           Na12-205         90581         90582           Na12-206         90582         19368           Na12-206         90581         90582           Na12-208         90581         90582           Na12-208 <t< th=""><th>900<br/>900<br/>1518<br/>1611<br/>534<br/>534<br/>536<br/>801<br/>738<br/>1506<br/>225<br/>1506<br/>225<br/>864<br/>1035<br/>864<br/>1035<br/>450<br/>978<br/>1023<br/>1725<br/>1098<br/>2382<br/>1674</th><th>(+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)</th><th>98.328         No.           94.257         No.           94.257         No.           94.254         No.           98.738         No.           98.738         No.           98.738         No.           97.238         No.           97.248         No.           97.330         No.           97.902         No.           97.933         No.           96.329         No.           96.333         No.           91.803         No.           91.803         No.           96.404         No.</th><th>hH.186         1800           oH1.187         1810           oH1.187         1820           oH1.188         1824           oH1.189         1846           oH1.191         1852           oH1.192         1862 
         oH1.191         1852           oH1.192         1864           oH1.193         1876           oH1.194         1885           oH1.195         1901           oH1.196         1904           oH1.197         1913           oH1.198         1902           oH1.199         1903           oH1.199         1903           oH1.190         1904           oH1.190         1902           oH1.191         1913           oH1.192         1902           oH1.193         1912           oH1.201         1952           oH1.202         1970           oH1.203         1981           oH1.204         2006</th><th>11         1180970         900           11         182577         1518           15         184585         954           1815285         1674         38585           184         1180217         534           56         186601         546           53         187653         8601           74         188411         738           71         190162         1596           44         190368         225           33         191298         864           41         19248         1035           58         193007         450           1941284         1035         873           30         197004         978           16         195133         1023           32         198120         1068           82         200563         232           0x0041         1705           82         200563         2322           0x044         1674</th><th>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)<br/>(+)</th><th>98.328         94.257         9           98.211         9         98.734         9           98.738         9         98.734         9           97.238         9         99.248         9           99.024         9         9         99.024         9           99.032         9         94.03         9         98.955         9           97.033         9         99.329         9         96.933         9         99.329         9         98.824         97.213         9         91.803         2         89.552         9         99.525         9         96.409         9         96.409         9         96.409         2</th><th>well-1:88         172566         8017           well-1:88         82014         8365           well-1:88         82014         8365           well-1:88         82014         8365           well-1:88         83704         8874           well-1:88         8374         8874           well-1:81         8368         8886           well-1:82         88696         8895           well-1:93         88696         8895           well-1:94         88968         8896           well-1:94         89971         9046           well-1:94         89972         9022           well-1:94         89724         9122           well-1:94         91725         9232         9432           well-1:94         91724         9121         9121           well-1:94         91744</th><th><math display="block"> \begin{array}{cccccccccccccccccccccccccccccccccccc</math></th><th><math display="block">\begin{array}{l} +) &amp; 98.98 + 0 \\ +) &amp; 97.33 + 0 \\ +) &amp; 97.31 + 0 \\ +) &amp; 96.22 \\ +) &amp; 97.31 + 0 \\ +) &amp; 98.73 + 0 \\ +) &amp; 98.73 + 0 \\ +) &amp; 98.93 + 0 \\ +) &amp; 99.23 + 0 \\ +) </math></th><th>S         Swelt2           24         Swelt2           24         Swelt2           24         Swelt2           28         Swelt2           27         Swelt2           28         Swelt2           29         Swelt2           20         Swelt2           212         Swelt2           22         Swelt2           23         Swelt2           243         Swelt2           25         Swelt2           26         Swelt2           27         Swelt2           28         Swelt2           29         Swelt2           20         Swelt2           25         Swelt2           26         Swelt2           27         Swelt2           28         Swelt2           29         Swelt2           20         Swelt2           26         Swelt2           27         Swelt2           28         Swelt2           29         Swelt2</th><th>188         17841           186         17916           187         18012           188         18189           183         18189           189         18367           190         18470           191         18528           192         15898           193         18677           194         18759           195         18918           196         18947           197         19043           200         19916           201         19432           202         19606           203         19722           204         19972</th><th>2 180061<br/>9 181646<br/>0 183566<br/>0 184623<br/>9 181646<br/>9 18245<br/>4 185838<br/>0 186690<br/>2 187449<br/>5 189100<br/>2 189406<br/>3 190342<br/>9 191473<br/>7 192046<br/>1 193111<br/>9 194181<br/>2 196046<br/>5 197162<br/>2 196046<br/>4 199626</th><th>900           1518           1677           954           537           555           801           678           1506           225           870           1035           450           981           1023           1725           1098           2403           1674</th><th>(+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)</th><th>96.238<br/>97.317<br/>98.423<br/>93.296<br/>94.565<br/>96.872<br/>96.889<br/>99.202<br/>94.03<br/>98.616<br/>97.093<br/>98.658<br/>95.399<br/>98.658<br/>95.399<br/>98.235<br/>97.090<br/>94.809<br/>96.02<br/>97.846</th></t<>  
   | 900<br>900<br>1518<br>1611<br>534<br>534<br>536<br>801<br>738<br>1506<br>225<br>1506<br>225<br>864<br>1035<br>864<br>1035<br>450<br>978<br>1023<br>1725<br>1098<br>2382<br>1674   
  | (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)  | 98.328         No.           94.257         No.           94.257         No.           94.254         No.           98.738         No.           98.738         No.           98.738         No.           97.238         No.           97.248         No.           97.330         No.           97.902         No.           97.933         No.           96.329         No.           96.333         No.           91.803         No.           91.803         No.           96.404         No.  
   
  | hH.186         1800           oH1.187         1810           oH1.187         1820           oH1.188         1824           oH1.189         1846           oH1.191         1852           oH1.192         1862           oH1.191         1852           oH1.192         1864           oH1.193         1876           oH1.194         1885           oH1.195         1901           oH1.196         1904           oH1.197         1913           oH1.198         1902           oH1.199         1903           oH1.199         1903           oH1.190         1904           oH1.190         1902           oH1.191         1913           oH1.192         1902           oH1.193         1912           oH1.201         1952           oH1.202         1970           oH1.203         1981           oH1.204         2006   
   
   | 11         1180970         900           11         182577         1518           15         184585         954           1815285         1674         38585           184         1180217         534           56         186601         546           53         187653         8601           74         188411         738           71         190162         1596           44         190368         225           33         191298         864           41         19248         1035           58         193007         450           1941284         1035         873           30         197004         978           16         195133         1023           32         198120         1068           82         200563         232           0x0041         1705           82         200563         2322           0x044         1674   | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)   | 98.328         94.257         9           98.211         9         98.734         9           98.738         9         98.734         9           97.238         9         99.248         9           99.024         9         9         99.024         9           99.032         9         94.03         9         98.955         9           97.033         9         99.329         9         96.933         9         99.329         9         98.824         97.213         9         91.803         2         89.552         9         99.525         9         96.409         9         96.409         9         96.409         2  
   
   | well-1:88         172566         8017           well-1:88         82014         8365           well-1:88         82014         8365           well-1:88         82014         8365           well-1:88         83704         8874           well-1:88         8374         8874           well-1:81         8368         8886           well-1:82         88696         8895           well-1:93         88696         8895           well-1:94         88968         8896           well-1:94         89971         9046           well-1:94         89972         9022           well-1:94         89724         9122           well-1:94         91725         9232         9432           well-1:94         91724         9121         9121           well-1:94         91744  | $ \begin{array}{cccccccccccccccccccccccccccccccccccc$   | $\begin{array}{l} +) & 98.98 + 0 \\ +) & 97.33 + 0 \\ +) & 97.31 + 0 \\ +) & 96.22 \\ +) & 97.31 + 0 \\ +) & 98.73 + 0 \\ +) & 98.73 + 0 \\ +) & 98.93 + 0 \\ +) & 99.23 + 0 \\ +) & 99.23 + 0 \\ +) & 99.23 + 0 \\ +) & 99.23 + 0 \\ +) & 99.23 + 0
\\ +) & 99.23 + 0 \\ +) $   | S         Swelt2           24         Swelt2           24         Swelt2           24         Swelt2           28         Swelt2           27         Swelt2           28         Swelt2           29         Swelt2           20         Swelt2           212         Swelt2           22         Swelt2           23         Swelt2           243         Swelt2           25         Swelt2           26         Swelt2           27         Swelt2           28         Swelt2           29         Swelt2           20         Swelt2           25         Swelt2           26         Swelt2           27         Swelt2           28         Swelt2           29         Swelt2           20         Swelt2           26         Swelt2           27         Swelt2           28         Swelt2           29         Swelt2   
   | 188         17841           186         17916           187         18012           188         18189           183         18189           189         18367           190         18470           191         18528           192         15898           193         18677           194         18759           195         18918           196         18947           197         19043           200         19916           201         19432           202         19606           203         19722           204         19972   
   | 2 180061<br>9 181646<br>0 183566<br>0 184623<br>9 181646<br>9 18245<br>4 185838<br>0 186690<br>2 187449<br>5 189100<br>2 189406<br>3 190342<br>9 191473<br>7 192046<br>1 193111<br>9 194181<br>2 196046<br>5 197162<br>2 196046<br>4 199626   | 900           1518           1677           954           537           555           801           678           1506           225           870           1035           450           981           1023           1725           1098           2403           1674  | (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)   | 96.238<br>97.317<br>98.423<br>93.296<br>94.565<br>96.872<br>96.889<br>99.202<br>94.03<br>98.616<br>97.093<br>98.658<br>95.399<br>98.658<br>95.399<br>98.235<br>97.090<br>94.809<br>96.02<br>97.846  
  |
| Cample kinse (Cop-85.8)<br>Sentre Kinse (Cop-81R)<br>Sehthen (Cop-81R)<br>Sehthen (Cop-81R)<br>EX type-1 membrane glycoprotein, protective an tigen (Cop-83R)<br>Malyrini kike protein (Cop-81R)<br>Sehthe TN-q receptor-like protein (Cop-83R)<br>Beh-neilen d grouteni (Cop-81R)<br>Sehthen TN-q receptor-like protein (Cop-83R)<br>ER be-niked a grouteni (Cop-81R)<br>Sergin 1.2,3 (Cop-82L)<br>Bypathecial protein (Cop-11R)<br>Sergin 1.2,3 (Cop-82L)<br>Bypathecial protein (Cop-11R)<br>Maryin (Cop-81R)<br>IV-alphabeta meeting grouperotein (Cop-819R)<br>IV-alphabeta meeting grouperotein grouperotein (Cop-819R)<br>IV-alphabeta meeting grouperotein (Cop-819R)<br>IV-alphabeta meeting grouperotein (Cop-819R)<br>IV-alphabeta meeting grouperotein grouperotein grouperotein grouperotein grouperotein grouperotein grouperotein grouperotein grouperotein   | A 57R<br>B1R<br>B2R<br>B4R<br>B5R<br>B5R<br>B5R<br>B7R<br>B5R<br>B1R<br>B1R<br>B1R<br>B1R<br>B1R<br>B1R<br>B1R<br>B1   | CPXV195<br>CPXV196<br>CPXV197<br>CPXV197<br>CPXV197<br>CPXV197<br>CPXV201<br>CPXV201<br>CPXV201<br>CPXV201<br>CPXV201<br>CPXV201<br>CPXV203<br>CPXV203<br>CPXV203<br>CPXV204<br>CPXV204<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV20                      | NoF1-18           NoF1-18           NoF1-18           NoF1-18           NoF1-19           NoF1-20           NoF1-20           NoF1-20           NoF1-20           NoF1-20           NoF1-20           NoF1-20   | 17860         179400           17951         18059           18751         18059           18326         18326           18327         18059           18326         18405           18326         18405           18327         18500           18571         18570           18571         18771           18571         18771           18571         18792           18571         18792           18963         18987           19964         19484           19971         19232           19961         19484           19770         19238           19654         19741           19772         20059           200162         21838   
  | 594<br>900<br>1518<br>1686<br>954<br>801<br>738<br>801<br>738<br>1506<br>225<br>864<br>1035<br>1005<br>450<br>978<br>1023<br>450<br>978<br>1023<br>1725<br>1098<br>2358<br>1674  | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  | 98/98/<br>97/324<br>97/324<br>97/324<br>97/39<br>97/38<br>98/258<br>97/37<br>99/248<br>97/333<br>99/002<br>97/333<br>99/002<br>98/258<br>97/674<br>99/258<br>97/674<br>99/233<br>98/235<br>97/674<br>99/235<br>97/674<br>99/235<br>97/674<br>99/235<br>97/674<br>99/235<br>97/674<br>97/235<br>97/674<br>97/235<br>97/235<br>97/24<br>97/235<br>97/24<br>97/24<br>97/24<br>97/257<br>97/24<br>97/257<br>97/24<br>97/257<br>97/24<br>97/257<br>97/24<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/277<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257<br>97/257   | Na1-2167         10006         1000-           Na1-2167         81005         1005-           Na1-2168         81005         1005-           Na1-2168         81005         1005-           Na1-2168         81005         1005-           Na1-2169         85506         18017           Na1-2191         85566         18017           Na1-2191         85566         18017           Na1-2191         85566         18017           Na1-2195         88518         18761           Na1-2195         89106         19033           Na1-2195         89116         1923           Na1-2196         91156         1923           Na1-2196         91156         1923           Na1-2196         91253         19046           Na1-2107         91057         1942           Na1-2108         91156         1933           Na1-2109         91051         19408           Na1-2109         91051         19408           Na1-2109         91045         19408           Na1-2200         90914         19314           Na1-2308         20134         20134           Na1-2308   
   
   |
900<br>1518<br>1611<br>154<br>554<br>554<br>554<br>554<br>566<br>801<br>728<br>801<br>728<br>804<br>728<br>1005<br>450<br>978<br>1035<br>450<br>1035<br>450<br>1023<br>1225<br>1035<br>450<br>1035<br>1035<br>450<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1 | (+)         (+)            | 98.528 No.<br>94.257 No.<br>94.454 No.<br>98.738 No.<br>97.238 No.<br>97.238 No.<br>97.238 No.<br>97.238 No.<br>97.333 No.<br>97.002 No.<br>97.003 No.<br>97.003 No.<br>97.003 No.<br>97.003 No.<br>97.003 No.<br>97.003 No.<br>97.003 No.<br>97.003 No.<br>98.552 No.<br>97.130 No.<br>97.140 No.   
   
   | bH1-186         [800           bH1-187         [810-11-87]           bH1-188         [828           bH1-188         [826           bH1-190         [856           bH1-191         [856           bH1-192         [886           bH1-193         [876           bH1-194         [886           bH1-195         [901           bH1-196         [904           bH1-197         [913           bH1-199         [930           bH1-199         [930           bH1-190         [941           bH1-191         [941           bH1-202         [970           bH1-203         [981           bH1-204         2006   
   
  | 11 [18770 900. 900. 901. 901. 902. 912.557 [1518 4012557 [5118 4012557 [5118 4012557 [5118 4012557 [5118 401257 [514 401257 [514 401257 [514 401257 [514 401257 [514 401256 ] 2255 [51575 30. 1014 401256 ] 225 [51575 30. 1014 401256 ] 225 [51575 30. 1014 401256 ] 225 [51575 30. 1014 401256 ] 225 [51575 30. 1014 401256 ] 215 [5157 30. 1013 40125 ] 215 [5157 30. 1013 4015 4015 4015 4015 4015 4015 4015 4015  | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)   | 98.328         94.257         9           94.257         9         9         1           98.738         9         98.738         9           98.738         9         97.238         9           97.238         9         99.021         9           99.020         94.03         9         99.002         9           99.020         94.03         9         99.023         9           96.933         9         96.933         9         96.933         9           91.803         8         95.52         9  
   
  | well-1-86         179266         80117           well-1-81         80236         80117           well-1-88         80236         8017           well-1-88         80236         8037           well-1-91         84333         8552           well-1-91         85438         8552           well-1-91         85468         8569           well-1-92         85666         8577           well-1-93         85676         8577           well-1-94         95670         19524           well-1-94         99526         19522           well-1-94         99526         19522           well-1-94         99526         19522           well-1-94         99526         19522           well-1-94         99526         19524           well-1-94         99547         19341           well-1-94         99547         19341           well-204         99547         19341           well-204         19344         19341           well-204         19354         19374           well-204         19352         20152           well-204         19354         19374   | $ \begin{array}{cccccccccccccccccccccccccccccccccccc$   | $\begin{array}{c} +) & 98.98 + 0 \\ +) & 97.33 + 0 \\ +) & 97.31 + 0 \\ +) & 97.31 + 0 \\ +) & 97.31 + 0 \\ +) & 97.31 + 0 \\ +) & 98.87 + 0 \\ +) & 98.87 + 0 \\ +) & 98.87 + 0 \\ +) & 99.32 \\ +) & 99.33 + 0 \\ +) &
99.33 + 0 \\ +) & 99.34 + 0 \\ +) & 99.34 + 0 \\ +) $   | SS         SweH2           V4         SweH2           V4         SweH2           V4         SweH2           V8         SweH2           V7         SweH2           V8         SweH2           V8         SweH2           V9         SweH2           V9         SweH2           V2         SweH2           V3         SweH2           V9         SweH2 <th>188         17841           -186         17916           -187         18012           -188         18189           -189         18367           -190         18470           -191         18528           -192         18589           -193         18677           -194         18759           -195         18918           -196         18947           -197         19043           -198         19159           -199         19213           -200         19315           -201         19432           -202         19606           -203         19722           -204         19972</th> <th>2 180061<br/>9 181646<br/>0 183566<br/>0 184623<br/>9 184623<br/>0 184623<br/>0 184623<br/>0 185465<br/>0 185445<br/>1 185838<br/>0 186690<br/>2 187449<br/>5 189100<br/>2 189406<br/>3 190342<br/>9 191473<br/>7 192046<br/>1 193111<br/>9 194181<br/>2 196046<br/>5 197162<br/>1 196046<br/>5 197162<br/>7 201400</th> <th>900<br/>1518<br/>1677<br/>954<br/>537<br/>555<br/>801<br/>678<br/>1506<br/>225<br/>870<br/>1035<br/>450<br/>981<br/>1023<br/>1725<br/>1098<br/>2403<br/>1674<br/>-<br/>122<br/>1074<br/>1023</th> <th>(+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)</th> <th>96.238<br/>97.317<br/>98.423<br/>93.296<br/>94.565<br/>98.872<br/>96.889<br/>99.203<br/>94.03<br/>94.03<br/>94.03<br/>98.616<br/>97.093<br/>98.658<br/>95.399<br/>95.399<br/>96.02<br/>97.846<br/>-</th>  
   | 188         17841           -186         17916           -187         18012           -188         18189           -189         18367           -190         18470           -191         18528           -192         18589           -193         18677           -194         18759           -195         18918           -196         18947           -197         19043           -198         19159           -199         19213           -200         19315           -201         19432           -202         19606           -203         19722           -204         19972  
   | 2 180061<br>9 181646<br>0 183566<br>0 184623<br>9 184623<br>0 184623<br>0 184623<br>0 185465<br>0 185445<br>1 185838<br>0 186690<br>2 187449<br>5 189100<br>2 189406<br>3 190342<br>9 191473<br>7 192046<br>1 193111<br>9 194181<br>2 196046<br>5 197162<br>1 196046<br>5 197162<br>7 201400  | 900<br>1518<br>1677<br>954<br>537<br>555<br>801<br>678<br>1506<br>225<br>870<br>1035<br>450<br>981<br>1023<br>1725<br>1098<br>2403<br>1674<br>-<br>122<br>1074<br>1023  | (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)   | 96.238<br>97.317<br>98.423<br>93.296<br>94.565<br>98.872<br>96.889<br>99.203<br>94.03<br>94.03<br>94.03<br>98.616<br>97.093<br>98.658<br>95.399<br>95.399<br>96.02<br>97.846<br>-   
  |
| Cample kinse (Cop-A5.5R)<br>Schlder (Cop-B1R)<br>Schlder (Cop-B1R)<br>Bell Vege-1 embane glycopotelia protective an tigen (Cop-B5R)<br>Malyrini (Cop-B4R)<br>Bell Vege-1 embane glycopotelia protective an tigen (Cop-B5R)<br>Malyrini Kample (Cop-B4R)<br>Schlde 1PN-g receptor-like protein (Cop-B5R)<br>Bel-Jonalder approxise regulator (Cop-B5R)<br>Bel-Jonalder Approxise (Cop-B12R)<br>Sergin L2 (Cop-B212)<br>Heydenkial protein (Cop-C16L)<br>L-1 beta inhibme receptor glycopotelin (Cop-B19R)<br>Malyrin (Cop-B5R)<br>(CVP-B-214<br>Belch-Biles protein (FX-1-167)<br>Hypotherical protein (Cop-C15R)<br>Sergin L2-9 (Cop-R21)  | A 57R<br>BIR<br>B2R<br>B4R<br>B5R<br>B5R<br>B5R<br>B7R<br>B5R<br>B1R<br>B1R<br>B1R<br>B1R<br>B1R<br>B1R<br>B1R<br>B1   | CPXV195<br>CPXV196<br>CPXV197<br>CPXV197<br>CPXV198<br>CPXV207<br>CPXV207<br>CPXV201<br>CPXV201<br>CPXV203<br>CPXV204<br>CPXV204<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV20                      | NoF1-18<br>NoF1-18<br>NoF1-18<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-19<br>NoF1-10<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20<br>NoF1-20  
   | 1 [1867] [17440]<br>1 [18757] [17440]<br>1 [18757] [182096]<br>1 [18757] [182096]<br>1 [18757] [182096]<br>1 [18757] [18719]<br>1 [18570] [18570]<br>1 [18577] [18571]<br>1 [18772] [18729]<br>1 [18772] [18729]<br>1 [18772] [18729]<br>1 [18767] [18751]<br>1 [18767] [18751]<br>1 [18767] [18752]<br>1 [18767] [18757]<br>1 [18777] [18772]<br>2 [18767] [18777]<br>2 [18777] [18777] [18777] [18777]<br>2 [18777]   | 594<br>900<br>1518<br>1686<br>954<br>300<br>546<br>801<br>738<br>1506<br>225<br>864<br>1035<br>450<br>978<br>978<br>978<br>978<br>978<br>978<br>978<br>978<br>978<br>978   | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  | 98385<br>97.324<br>97.324<br>97.504<br>98.738<br>100<br>97.73<br>99.024<br>97.333<br>99.024<br>97.333<br>99.024<br>97.333<br>99.025<br>97.337<br>99.329<br>97.387<br>99.329<br>97.387<br>92.077<br>89.25<br>97.387<br>92.077<br>89.25<br>97.387<br>92.077<br>89.25<br>97.387<br>92.077  | NAT-2: 16 1 2006 [1899;<br>NaT-2: 16 1 2006 [1899;<br>NaT-2: 18 1 2005 [1899;<br>NaT-2: 19 1 2523 [1844]<br>NaT-2: 19 1 2523 [1844]<br>NaT-2: 19 1 5554 [1857]<br>NaT-2: 19 1 5554 [1857]<br>NaT-2: 19 1 5554 [1857]<br>NaT-2: 19 1 5554 [1857]<br>NaT-2: 19 1 5555 [1959]<br>NaT-2: 19 1 5575 [1959]<br>NaT-2: 19 1 5575 [1959]<br>NaT-2: 19 1 5575 [1959]<br>NaT-2: 19 1 5575 [1959]<br>NaT-2: 19 1 5572 [1959]<br>NaT-2: 20 1 5572 [195   
   
  | 900<br>1518<br>1611<br>954<br>534<br>534<br>534<br>534<br>534<br>534<br>534<br>5   
   | (+)         (+)            | 98.238         No.           94.257         No.           94.257         No.           94.258         No.           98.738         No.           97.238         No.           99.244         No.           99.234         No.           99.245         No.           99.238         No.           99.244         No.           99.020         No.           94.031         No.           96.633         No.           91.803         No.           91.234         No.           91.235         No.           91.230         No.           95.240         No.           91.233         No.           95.244         No.           91.235         No.           95.244         No.           95.252         No.           96.409         No.           95.014         No.  
   
   | bH1-186         [800           bH1-187         [810-11-87]           bH1-187         [810-11-80]           bH1-188         [828           bH1-189         [846-01-190]           bH1-191         [856-01-192]           bH1-192         [868           bH1-193         [876-011-194]           bH1-194         [885-011-194]           bH1-195         [900-011-194]           bH1-196         [904-011-96]           bH1-196         [904-011-96]           bH1-197         [913-011-196]           bH1-190         [941-00]           bH1-200         [941-200]           bH1-201         [900-011-203]           bH1-202         [900-011-204]           bH1-204         2006-1-204           c         -           c         -           c         -           c         -           bH1-205         2025-2025           bH1-204         2006-2025           c         -           c         -           c         -           c         -           c         -  
   
  | 11 [18707 0 900]<br>10 [18707 51]<br>15 [18707 15]<br>15 [18725 1 51]<br>15 [18725 1 51]<br>15 [18753 1 80]<br>15 [18765 3 80]<br>15 [1876 3 80]<br>15 [18  | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)   | 98.328         94.257         9           94.257         9         9         9           98.324         9         9         9           97.338         9         99.248         9           97.338         9         99.002         9           94.037         9         94.03         9           99.002         9         94.03         9           99.002         9         96.933         9           96.933         9         98.824         9           91.803         9         98.552         9           96.409         5         9         9           96.409         5         -         -           95.014         9         -         -  
   
  | well-1:82         17256         1807           well-1:83         1837         1847           well-1:84         1837         1847           well-1:94         18488         1853           well-1:94         18488         1859           well-1:94         18488         1897           well-1:94         1849         1897           well-1:94         19330         1895           well-1:94         19330         1895           well-1:94         19330         1895           well-1:94         19330         1895           well-1:94         19721         1912           well-1:94         19724         1941           well-1:94         19734         1943           well-201         19734         1947           well-201         19734         1947           well-201         19734         1947           well-201         19734         1947           well-201         19734<   | $ \begin{array}{cccccccccccccccccccccccccccccccccccc$   | $\begin{array}{c} +) & 98.98 + 0 \\ +) & 97.33 + 0 \\ +) & 97.33 + 0 \\ +) & 96.22 + 0 \\ +) & 97.33 + 0 \\ +) & 98.73 + 0 \\ +) & 98.65 + 0 \\ +) & 98.65 + 0 \\ +) & 98.65 + 0 \\ +) & 99.20 \\ +$   | SS         Swelf2           M         Swelf2           M         Swelf2           M         Swelf2           Swelf2         Swelf2           -         -           -         -           -        
-           -         -           -         -           -         -           -         -           -         -           -         -           -         -      -  | 188         17841           -186         17916           -186         17916           -187         18012           -188         18189           -189         18367           -190         18470           -191         18528           -192         18589           -193         18677           -194         18759           -195         18918           -196         18947           -197         19043           -196         18947           -197         19043           -198         19159           -199         19213           -200         19315           -201         19432           -202         19606           -203         19722           -204         19972           -204         19972   
  | 2 180061<br>9 181646<br>0 183566<br>0 184623<br>9 182642<br>9 182452<br>9 185245<br>5 189100<br>2 187449<br>5 189100<br>2 187449<br>5 189100<br>3 190342<br>9 191473<br>7 192046<br>1 193111<br>2 196046<br>5 197162<br>4 199626<br>7 201400<br>-<br>0 202701<br>6 203445<br>9 194181<br>9 19418181<br>9 194181<br>9 194181<br>9 194181<br>9 194181<br>9 194181<br>9 194181<br>9 19418  |
900<br>1518<br>1677<br>954<br>537<br>555<br>801<br>678<br>801<br>678<br>1506<br>225<br>870<br>1035<br>450<br>981<br>1023<br>1725<br>1098<br>2403<br>1677<br>-<br>1677<br>-<br>1677<br>-<br>1677<br>-<br>1677<br>-<br>1677<br>-<br>1677<br>-<br>1677<br>-<br>1677<br>-<br>1508<br>-<br>1508<br>-<br>1508<br>-<br>1508<br>-<br>1508<br>-<br>1508<br>-<br>1508<br>-<br>1508<br>-<br>1508<br>-<br>1508<br>-<br>1508<br>-<br>1508<br>-<br>1508<br>-<br>1508<br>-<br>1508<br>-<br>1508<br>-<br>1508<br>-<br>1508<br>-<br>1508<br>-<br>1508<br>-<br>1508<br>-<br>1508<br>-<br>1508<br>-<br>1508<br>-<br>1508<br>-<br>1508<br>-<br>1508<br>-<br>1508<br>-<br>1003<br>-<br>1708<br>-<br>1003<br>-<br>1708<br>-<br>1708<br>-<br>1003<br>-<br>1003<br>-<br>1003<br>-<br>1775<br>-<br>1003<br>-<br>1003<br>-<br>1775<br>-<br>1003<br>-<br>1775<br>-<br>1003<br>-<br>1003<br>-<br>1003<br>-<br>1003<br>-<br>1003<br>-<br>1003<br>-<br>1003<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>1008<br>-<br>10 | (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)   | 96.238<br>97.317<br>98.423<br>93.296<br>94.565<br>98.872<br>96.887<br>99.202<br>94.03<br>98.616<br>97.093<br>98.658<br>95.399<br>98.235<br>95.399<br>98.235<br>97.909<br>96.02<br>97.846<br>-<br>-   |
| Cample kinse (Cop-A5.8)<br>Sentific Kinse (Cop-B1R)<br>Sehtlern (Cop-B1R)<br>Sehtlern (Cop-B2R)<br>Adaynin (Cop-B2R)<br>EV type-1 membrane glycoprotein, protective an tigen (Cop-B3R)<br>Malyrinikker, BR resident (Cop-B3R)<br>Sehtle TV-9, receptor-like portent (Cop-B3R)<br>Beh-nallerd approtein (Cop-B3R)<br>II-1 beta inhibiter (Cop-B3R)<br>IN-stajabeta meeting glycoprotein (Cop-B3R)<br>Malyrin (Cop-B3R)<br>(CVV-3-214<br>ketch-Bite protein (Cop-C14).<br>Bepderkial protein (Cop-C14).   | A 57R<br>B1R<br>B2R<br>B4R<br>B5R<br>B6R<br>B7R<br>B6R<br>B1R<br>B1R<br>B1R<br>B1R<br>B1R<br>B1R<br>B1R<br>B1  | CPXV195<br>CPXV196<br>CPXV197<br>CPXV197<br>CPXV198<br>CPXV199<br>CPXV201<br>CPXV201<br>CPXV201<br>CPXV201<br>CPXV201<br>CPXV203<br>CPXV203<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV20                      | NoF1-18           NoF1-18           NoF1-18           NoF1-18           NoF1-19           NoF1-20   | 1788-07         1794-00           1882-07         1794-01           1802-07         1802-06           1802-07         1802-06           1802-07         1802-06           1802-07         1852-00           1802-07         1855-00           1802-07         1855-00           1802-07         1855-00           1802-07         1857-01           1802-07         1877-01          
1802-07         1877-01           1802-07         1877-01           1802-07         1879-01           1802-07         1897-01           1802-07         199-01           199-07         192-02           199-07         192-02           199-07         192-02           199-07         192-02           199-07         192-02           199-07         192-02           199-07         192-02           199-07         192-02           199-07         192-02           199-07         194-09           199-07         194-09           199-07         194-09           199-07         194-09           199-07         199-09   | 594<br>900<br>1518<br>1686<br>954<br>800<br>546<br>801<br>738<br>1506<br>225<br>864<br>1506<br>225<br>864<br>1035<br>1506<br>225<br>864<br>1035<br>1506<br>225<br>864<br>1035<br>1098<br>2358<br>1098<br>2358<br>1674  | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  | 98385<br>97.324<br>97.324<br>97.504<br>98.738<br>100<br>97.79<br>99.248<br>97.333<br>99.028<br>97.333<br>99.029<br>99.248<br>97.333<br>99.029<br>99.249<br>99.249<br>99.258<br>97.549<br>99.259<br>97.387<br>92.077<br>89.25<br>97.546<br>97.549<br>97.549<br>97.549<br>97.549<br>97.549<br>97.549<br>97.549<br>97.549<br>97.549<br>97.549<br>97.549<br>97.549<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>97.559<br>9   | Na12-161         80006         8809           Na12-161         80006         8809           Na12-161         81005         81254           Na12-181         81005         81254           Na12-191         85566         8817           Na12-191         8556         1817           Na12-191         8556         1817           Na12-191         8551         1876           Na12-191         89106         19033           Na12-191         98231         1566           Na12-201         99025         19048           Na12-201         99035         19048           Na12-201         99045         19048           Na12-201         99045         19048           Na12-201         99045         19048           Na12-202         99045         19048           Na12-203         9047         2013         20147           Na12-204  
   
   
  | 900<br>900<br>1518<br>1611<br>954<br>554<br>554<br>554<br>801<br>738<br>801<br>738<br>803<br>804<br>804<br>805<br>225<br>450<br>978<br>1005<br>225<br>450<br>978<br>1023<br>1023<br>1023<br>1023<br>1023<br>1023<br>1023<br>1023<br>1023<br>1023<br>1023<br>1025<br>1023<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>10 | (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)  | 98.328         No.           94.257         No.           94.257         No.           94.454         No.           98.738         No.           97.238         No.           97.238         No.           97.238         No.           97.238         No.           97.333         No.           97.029         No.           97.039         No.           97.093         No.           97.093         No.           98.555         No.           98.655         No.           98.652         No.           97.213         No.           91.803         No.           91.803         No.           94.633         No.           94.634         No.           94.635         No.           94.639         No.           94.640         No.           95.014         No.           95.014         No.           95.014         No.           95.014         No.   
   
   | bH1-186         [800           bH1-187         [810-18]           bH1-188         [826           bH1-188         [826           bH1-188         [826           bH1-188         [826           bH1-188         [826           bH1-188         [826           bH1-198         [826           bH1-191         [826           bH1-192         [886           bH1-193         [876           bH1-194         [876           bH1-195         [901           bH1-196         [904           bH1-197         [913           bH1-198         [925           bH1-201         [920           bH1-202         [970           bH1-203         [981           bH1-204         2066           bH1-205         2025           bH1-206         2037  
   
  | 171 [18770 900 900 901 901 901 901 901 901 901 90   | (+)            
   | 98.328         9           94.257         9           98.211         9           98.738         9           98.738         9           98.738         9           99.234         9           99.248         9           99.002         9           94.03         9           99.002         9           99.003         9           99.005         9           99.005         9           99.329         9           99.329         9           99.329         9           99.329         9           99.329         9           91.803         9           91.803         9           96.409         2           -         -           95.014         2           94.845         9  
  | well-1:8:1         17256         5011           well-1:8:1         10325         5011           well-1:8:1         10327         11347           well-1:8:1         10327         11347           well-1:9:1         10374         11344           well-1:9:1         10474         11344  
   | $ \begin{array}{cccccccccccccccccccccccccccccccccccc$   | $\begin{array}{llllllllllllllllllllllllllllllllllll$   | 55         Swelt2           54         Swelt2           54         Swelt2           54         Swelt2           77         Swelt2           78         Swelt2           55         Swelt2           56         Swelt2           55         Swelt2           56         Swelt2           57         Swelt2           58         Swelt2           59         Swelt2           59         Swelt2           59         Swelt2           59         Swelt2           59         Swelt2           50         Swelt2           51         Swelt2           52         Swelt2           53         Swelt2           54         Swelt2  
   | 188 17841<br>188 17841<br>186 17916<br>188 1880<br>189 1880<br>189 18367<br>199 184528<br>192 18589<br>193 18677<br>194 18759<br>194 18759<br>195 18918<br>196 18947<br>197 19043<br>197 19432<br>200 19432<br>201 19432<br>201 19432<br>202 19606<br>203 19722<br>   
   | 2 180061<br>9 181646<br>0 183566<br>0 184623<br>9 185245<br>1 18566<br>0 184623<br>9 185245<br>1 195245<br>1 19525<br>1 195245<br>1 19525<br>1 19555<br>1 195555<br>1 1955555<br>1 1955555<br>1 1955555<br>1 1955555<br>1 195555555555  | 900<br>1518<br>1677<br>954<br>537<br>555<br>801<br>678<br>1506<br>225<br>870<br>1035<br>450<br>981<br>1023<br>1035<br>1725<br>1098<br>2403<br>1725<br>1098<br>1725<br>1098<br>2403<br>1725<br>1725<br>179<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1707<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007   | (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)   | 96.238<br>97.317<br>98.423<br>93.296<br>94.565<br>98.872<br>96.889<br>99.202<br>94.03<br>98.616<br>97.093<br>98.616<br>95.399<br>98.235<br>97.909<br>94.809<br>96.02<br>97.846<br>-<br>96.505<br>96.373   
  |
| Cample kinse (Cop-A5.8)<br>Schlart (Cop-B1R)<br>Schlart (Cop-B1R)<br>BEY type-1 menhane glycopotelia protective an tigen (Cop-B5R)<br>Malyrini (Cop-B4R)<br>EV type-1 menhane glycopotelia protective an tigen (Cop-B5R)<br>Malyrini Kape (Cop-B4R)<br>Schlart HN-q receptor-like protein (Cop-B5R)<br>EA-bealled apposite regulator (Cop-B5R)<br>EA-bealled apposite (Cop-B1R)<br>Schlart HN-q receptor-like protein (Cop-B5R)<br>EA-bealled apposite (Cop-B1R)<br>Schlart HN-q receptor-like protein (Cop-B5R)<br>EA-bealled apposite (Cop-B1R)<br>Scrift In Science (Cop-B1R)<br>Scrift In Science (Cop-B1R)<br>Hypothesial protein (Cop-B1R)<br>L-1 beat inhibmen (Cop-B1R)<br>L-1 beat inhibmen receptor glycoprotein (Cop-B1R)<br>Malyrin (Cop-B1R)<br>Cop-B3R)<br>(Cyr-B-214<br>Hech-Bise protein (Cop-C161)<br>L-1 beat inhibmen (Cop-B1R)<br>Malyrin (Cop-B3R)<br>(Cyr-B-214<br>Hech-Bise protein (Cop-C161)<br>EA-bise protein (Cop-C161)<br>Hypothesial protein (Cop-C161)  | A 57R<br>B1R<br>B2R<br>B4R<br>B5R<br>B5R<br>B5R<br>B5R<br>B7R<br>B5R<br>B1R<br>B1R<br>B1R<br>B1R<br>B1R<br>B1R<br>B1R<br>B1  | CPXV195<br>CPXV196<br>CPXV197<br>CPXV197<br>CPXV198<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV20                      | NoF1-18           NoF1-18           NoF1-18           NoF1-18           NoF1-19           NoF1-20           NoF1-20           NoF1-20           NoF1-20           NoF1-20           NoF1-20           NoF1-20           NoF1-20           NoF1-20   | 1788-07         1794-00           1788-07         1794-01           1825-79         18229-60           1825-79         18229-60           1825-79         18229-60           1825-70         18229-60           1825-70         18229-60           1855-70         185500           1855-70         185500           1857-71         18571           1857-71         18571           1857-71         18571           1857-71         18571           1857-71         18571           1857-71         18571           1857-71         18571           18570         1959-1198-57           1959-1198-57         199-57           1959-1198-57         199-57           1959-1198-57         199-57           1959-1198-57         199-57           1950-1192-1192-58         199-57           1950-1192-1192-58         199-57           1950-1192-1192-58         199-57           1950-1192-1192-58         199-57           1950-1192-1192-192-58         199-57           1950-1192-1192-192-192-192-192-192-192-192-1                                   
  | 594<br>900<br>1518<br>1518<br>1686<br>954<br>801<br>738<br>1506<br>225<br>864<br>1035<br>2864<br>1035<br>864<br>1035<br>864<br>1035<br>1023<br>1725<br>864<br>1023<br>1725<br>864<br>1023<br>1725<br>1098<br>2358  | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  | 98385<br>97.324<br>97.324<br>97.538<br>98.738<br>100<br>97.73<br>99.248<br>97.333<br>99.248<br>97.333<br>99.248<br>97.333<br>99.248<br>97.333<br>99.258<br>97.674<br>99.329<br>97.587<br>97.387<br>99.329<br>97.387<br>99.329<br>97.387<br>99.329<br>97.387<br>99.329<br>97.387<br>99.329<br>97.387<br>99.329<br>97.387<br>99.329<br>97.387<br>99.329<br>97.387<br>99.329<br>97.387<br>99.329<br>97.387<br>99.329<br>97.346<br>9.531<br>94.345<br>95.581<br>94.545<br>95.573  | Na12-161         10006         1009-1           Na12-161         81006         1009-1           Na12-181         81005         1005-1           Na12-181         81005         1005-1           Na12-181         81005         1005-1           Na12-191         85564         18617           Na12-191         85646         18617           Na12-191         85616         18617           Na12-191         85616         18617           Na12-191         85616         18617           Na12-191         85616         18637           Na12-191         80151         19016           Na12-191         90357         19230           Na12-201         90357         19519           Na12-201         90357         19519           Na12-201         90458         19516           Na12-201         90458         19512           Na12-201         90458         19512           Na12-201         90458         19018           Na12-201         90458         19018           Na12-201         90458         19018           Na12-201         90458         19035           Na12-202   
   
   |
900<br>900<br>1518<br>1611<br>1518<br>954<br>534<br>534<br>534<br>534<br>534<br>1506<br>225<br>864<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035     | (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)  | 98.228         No.           94.257         No.           94.257         No.           98.738         No.           98.738         No.           97.238         No.           97.238         No.           97.238         No.           97.020         No.           99.022         No.           94.631         No.           96.333         No.           96.333         No.           99.255         No.           99.329         No.           99.333         No.           99.329         No.           91.803         No.           97.213         No.           97.213         No.           96.434         No.           97.214         No.           96.409         No.           96.409         No.           95.014         No.           94.454         No.           94.454         No.           96.573         No.  
   
   | bH1-186         [800           bH1-378         [800           bH1-378         [804           bH1-388         [828           bH1-388         [828           bH1-388         [828           bH1-388         [828           bH1-388         [826           bH1-398         [826           bH1-391         [826           bH1-391         [826           bH1-391         [826           bH1-394         [885           bH1-394         [885           bH1-395         [901           bH1-394         [885           bH1-395         [901           bH1-394         [902           bH1-395         [901           bH1-396         [901           bH1-397         [913           bH1-396         [901           bH1-200         [901           bH1-201         [902           bH1-202         [906           cH1-203         [981           cH1-204         [206           cH1-205         [202           cH1-206         [203           cH1-207         [204   
   
  | 11         ISP/0         900           901         901         901           91         ISP/0         154           91         ISP/0         154           92         ISP/0         156           93         102         167           94         103         102           94         104         102           95         1024         107           96         124         167           97         224         167           92         167         11   | $\begin{array}{c} (+) \\$ | 98.218         5           94.257         5           98.211         5           98.213         5           98.214         5           97.238         5           97.338         5           97.338         5           99.010         5           98.2013         5           99.024         5           99.035   
     5           99.238         5           99.239         9           99.232         5           99.232         5           99.232         5           91.803         8           91.803         8           91.803         8           94.014         1           91.803         8           91.803         8           94.815         1           94.845         1           94.845         1   
   | well-1 88 [17256 [30]<br>well-1 88 [3024 [38]<br>well-1 88 [3024 [38]<br>well-1 88 [3024 [38]<br>well-1 88 [3024 [38]<br>well-1 98 [38]<br>well-1 99 [38]<br>well-1 99 [38]<br>well-2 [38]<br>w | $ \begin{array}{cccccccccccccccccccccccccccccccccccc$   | $\begin{array}{c} +) & 98.98 + 0 \\ +) & 97.83 + 0 \\ +) & 97.33 + 0 \\ +) & 96.22 + 0 \\ +) & 96.23 + 0 \\ +) & 96.23 + 0 \\ +) & 96.23 + 0 \\ +) & 96.23 + 0 \\ +) & 96.23 + 0 \\ +) & 96.23 + 0 \\ +) & 96.23 + 0 \\ +) & 96.23 + 0 \\ +) & 96.23 + 0 \\ +) & 97.95 + 0 \\ +) & 97.95 + 0 \\ +) & 97.95 + 0 \\ +) & 97.95 + 0 \\ +) & 97.95 + 0 \\ +) & 97.95 + 0 \\ +) & 97.95 + 0 \\ +) & 97.95 + 0 \\ +) & 97.95 + 0 \\ +) & 97.95 + 0 \\ +) & 97.95 + 0 \\ +) & 97.95 + 0 \\ +) & 97.95 + 0 \\ +) & 96.03 + 0
\\ +) & 96.03 + 0 \\$   | 55         Swelt2           56         Swelt2           58         Swelt2           58         Swelt2           58         Swelt2           56         Swelt2           55         Swelt2           56         Swelt2           57         Swelt2           58         Swelt2           59         Swelt2           50         Swelt2           55         Swelt2           56         Swelt2           57         Swelt2           58         Swelt2           59         Swelt2           50   
   | 136         1784           186         17916           187         18012           188         18198           186         1819           190         1870           190         1870           191         1872           192         18589           193         187719           194         187599           195         18141           196         18347           197         19043           200         19432           201         19432           202         19462           203         19722           204         19972           205         205           206         205           207         205           208         19972           209         205           201         205  
   | 2 180061<br>9 181646<br>0 183566<br>0 183566<br>0 184623<br>9 185245<br>4 185285<br>0 186690<br>2 18749<br>5 189100<br>2 187449<br>5 189100<br>2 187449<br>5 189100<br>2 187449<br>5 189100<br>2 187449<br>9 191473<br>1 90342<br>9 191473<br>1 91046<br>5 197162<br>4 199626<br>7 201400<br>   | 900<br>1518<br>1677<br>954<br>537<br>555<br>801<br>678<br>1506<br>678<br>1506<br>225<br>870<br>1035<br>450<br>981<br>1023<br>1725<br>1098<br>2403<br>1098<br>2403<br>1122<br>582<br>5775  | (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)   | 96.238<br>97.317<br>98.423<br>93.296<br>94.565<br>98.872<br>96.889<br>99.202<br>94.03<br>98.616<br>97.093<br>98.658<br>95.399<br>98.658<br>95.399<br>98.205<br>97.909<br>97.909<br>97.909<br>97.909<br>97.909<br>97.846<br>-<br>-<br>96.373<br>96.469   
  |
| Cample kinse (Cop-85.8)<br>Senther (Cop-81R)<br>Senther (Cop-81R)<br>Explore (Cop-81R)<br>EX type-1 membrane glycoprotein, protective an tigen (Cop-85R)<br>Malyrini & protein (Cop-86R)<br>Senther TN-9, receptor-like protein (Cop-188)<br>Senther TN-9, receptor-like protein (Cop-188)<br>Beh-acalierd approtein (Cop-81R)<br>Senther TN-9, receptor-like protein (Cop-188)<br>Hypotherical protein (Cop-81R)<br>Servin 1.2, COp-81R)<br>Servin 1.2, COp-81R<br>Servin 1.2, COp-81R<br>Beyotherical cop-81R<br>Servin 1.2, COp-81R<br>Hypotherical protein (Cop-181R)<br>Beyotherical protein (Cop-181R)<br>Beyotherical protein (Cop-181R)<br>H-1 beta hindhure (Cop-81R)<br>II-1 beta hindhure (Cop-81R)<br>II-3 beta hindhure (Cop-81R)<br>II-3 beta hindhure (Cop-181R)<br>Malyrin (Cop-81R)<br>II-3 beta hindhure (Cop-181R)<br>Beyotherical protein (Cop-118)<br>Servin 1.2, ICOp-821N<br>Hypotherical protein (Cop-C14L)<br>Sardner gycoprotein<br>Malyrin (Cop-C14U)   | A 57R<br>B1R<br>B2R<br>B3R<br>B5R<br>B6R<br>B7R<br>B5R<br>B7R<br>B7R<br>B7R<br>B1R<br>B1R<br>B1R<br>B1R<br>B1R<br>B1R<br>B1R<br>B1   | CPXV195<br>CPXV196<br>CPXV197<br>CPXV197<br>CPXV198<br>CPXV199<br>CPXV201<br>CPXV201<br>CPXV201<br>CPXV201<br>CPXV203<br>CPXV203<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV210<br>CPXV211<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV21                      | NoF1-18           NoF1-18           NoF1-18           NoF1-18           NoF1-19           NoF1-20   | 1788-07         1794-00           1980-17         18220-01           18270-18220-06 
       1822-00           18270-18220-06         1822-00           18270-18220-06         1822-00           1842-01         1852-00           1842-01         1852-00           1842-01         1852-00           1857-01         1885-00           1857-11         1837-01           1856-01         1895-00           1895-01         1895-00           1895-01         1995-00           1895-01         1995-00           1995-01         1995-00           1995-01         1995-00           1995-01         1995-00           1995-01         1995-00           1995-01         1995-00           1995-01         1995-00           1995-00         1995-00           1995-00         1995-00           1995-00         1995-00           1995-00         1995-00           1995-00         1995-00           1995-00         1995-00           1995-00         1995-00           1995-00         1995-00           1995-00         1995-00  | 594           900           900           1518           1686           954           300           546           801           738           1505           225           864           1003           978           1025           235           450           978           1098           235           1674           172           1098           235           1674           1110           582           5766           1806  | (+)             | 98385<br>97324<br>97324<br>97324<br>98738<br>100<br>99248<br>100<br>99248<br>97033<br>99002<br>99002<br>99002<br>99002<br>99002<br>99002<br>99002<br>99002<br>99002<br>99002<br>99633<br>98235<br>99633<br>9825<br>92077<br>8925<br>97.846<br>95.81<br>96533  | Na1-2161         80006         8869           Na1-2161         80006         8869           Na1-2163         81005         81254           Na1-2163         81005         81254           Na1-2191         85566         8817           Na1-2193         88518         18761           Na1-2195         88151         18761           Na1-2195         88151         18761           Na1-2195         88151         18761           Na1-2195         88151         18761           Na1-2195         18910         19025           Na1-2194         91251         19037           Na1-2105         19037         19125           Na1-2105         19038         19047           Na1-2200         19045         19048           Na1-2200         19045         19048           Na1-2200         19042         19048           Na1-2200         19043         20434           Na1-2201         19  
   
   
   | 900<br>900<br>1518<br>1611<br>1518<br>954<br>534<br>954<br>534<br>801<br>136<br>125<br>225<br>1366<br>1035<br>225<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035      | (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)  | 98.228         No.           94.257         No.           94.257         No.           98.738         No.           98.234         No.           97.238         No.           97.233         No.           97.235         No.           97.236         No.           97.237         No.           97.238         No.           97.230         No.           97.235         No.           97.237         No.           99.238         No.           99.239         No.           99.239         No.           99.032         No.           97.193         No.           97.133         No.           97.133         No.           94.640         No.           95.014         No.           95.014         No.           96.555         No.           96.555         No.           95.558         No.           95.558         No.           95.558         No.  
   
  | bH1-186         [800           bH1-187         [810-18]           bH1-188         [828           bH1-188         [826           bH1-188         [826           bH1-188         [826           bH1-188         [826           bH1-191         [826           bH1-191         [826           bH1-192         [886           bH1-193         [876           bH1-194         [885           bH1-195         [901           bH1-196         [904           bH1-197         [930           bH1-198         [925           bH1-199         [930           bH1-201         [952           bH1-201         [952           bH1-203         [981           bH1-203         [981           bH1-204         [206           bH1-205         [2025           bH1-205         [2025           bH1-205         [2025           bH1-206         [2037           bH1-207         [2046           bH1-208         [206           bH1-208         [206  
   
   | 171 [18770 900 900 901 901 901 901 901 901 901 90   | $\begin{array}{c} (+) \\ (+)
\\ (+) \\$ | 98.328         9           94.257         5           94.257         5           98.211         8           98.212         8           98.718         8           98.718         8           97.28         9           97.33         5           99.026         9           94.03         5           99.053         9           99.053         9           99.053         9           99.053         9           99.713         2           91.803         8           97.713         9           96.040         2           96.040         2           96.040         2           96.73         9           96.73         9   
  | well-1:8:1         179256         8011           well-1:8:1         80251         8017           well-1:8:1         80274         8867           well-1:9:1         81374         8867           well-1:9:1         81370         8869           well-1:9:1         91370         9137           well-1:9:1         91370         9137           well-1:9:1         9137         9137           well-1:9:1         9137         9137           well-1:9:1         9147         9147           well-1:0:1         91734         9173           well-1:0:1         91734         9173           well-1:0:1         91734         9173           well-1:0:1         91734         9173           well-1:0:1         91730         9032          
well-1:0:1         91730         9032           w  | $ \begin{array}{cccccccccccccccccccccccccccccccccccc$   | $\begin{array}{l} +) & 98.98 + 0 \\ +) & 97.33 + 0 \\ +) & 97.33 + 0 \\ +) & 962.2 \\ +) & 97.33 + 0 \\ +) & 962.2 \\ +) & 97.33 + 0 \\ +) & 97.33 + 0 \\ +) & 97.33 + 0 \\ +) & 97.33 + 0 \\ +) & 97.45 + 0 \\ +) & 97.65 + 0 \\ +) & 96.05 + 0 \\ +) & 96$   | SS         Swelt2           Swelt2         Swelt2  
   | 136         1744           136         1794           147         180122           148         180           149         1857           149         1857           149         1857           149         1857           149         1859           149         1859           149         1859           149         1859           149         1859           149         1859           149         1859           149         1859           149         195           149         195           149         195           149         195           149         195           149         195           149         195           149         195           149         195           149         195           149         195           149         195           149         195           149         195           149         195           149         195           149         197  
   | 2   18066  <br>9   181646  <br>182564  <br>9   18245  <br>9   18245  <br>9   18245  <br>9   18245  <br>9   18423  <br>184906  <br>184906  <br>184906  <br>184906  <br>184906  <br>19311  <br>1931  | 900<br>1518<br>1677<br>954<br>537<br>555<br>801<br>678<br>11506<br>225<br>870<br>1035<br>450<br>981<br>1035<br>450<br>981<br>1023<br>1725<br>1098<br>2403<br>1725<br>1677<br>1122<br>582<br>5775<br>1740  | (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)   | 96.238<br>97.317<br>98.423<br>93.296<br>93.296<br>94.565<br>98.879<br>99.202<br>94.03<br>98.616<br>97.093<br>98.616<br>97.093<br>98.616<br>97.093<br>98.625<br>99.202<br>94.809<br>96.02<br>96.02<br>96.02<br>96.505<br>96.373<br>96.505   
   |
| Campite kinsse (Cop-A56.SR)           Schhlern (Cop-B1R)           Schhlern (Cop-B1R)           Schhlern (Cop-B1R)           BEY type-1 menihane glycopnotelia protective an tigen (Cop-B5R)           Malyrin (Cop-B4R)           EEY type-1 menihane glycopnotelia protective an tigen (Cop-B5R)           Malyrin KLOP-B4R)           EEY type-1 menihane glycopnotelia protective an tigen (Cop-B5R)           Schube HTN-q receptor-like protein (Cop-B5R)           Bey Cope Cope Cope Cope Cope Cope Cope Cope  | A 57R<br>B1R<br>B2R<br>B4R<br>B5R<br>B5R<br>B5R<br>B5R<br>B5R<br>B5R<br>B1R<br>B1R<br>B1R<br>B1R<br>B1R<br>B1R<br>B1R<br>B1  | CPXV195<br>CPXV196<br>CPXV197<br>CPXV197<br>CPXV198<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV21                      | NoF1-18           NoF1-18           NoF1-18           NoF1-18           NoF1-19           NoF1-20   
                     | 1 788-67 1794-60<br>1 789-67 18239-6<br>1 81579 18239-6<br>1 81579 18239-6<br>1 823-01 18429-6<br>1 823-01 18429-1<br>1 853-01 185500<br>1 853-01 185500<br>1 85574 18631<br>1 85774 18631<br>1 85774 18631<br>1 85774 18631<br>1 85774 18631<br>1 85774 18631<br>1 89761 198951<br>1 89863 189887<br>1 89963 189887<br>1 89963 189887<br>1 99964 191984<br>1 99964 19186<br>1 99964<br>1 99964 19186<br>1 99964 19186<br>1 99964<br>1 99964 19186<br>1 99964<br>1 99964<br>1 99966<br>1 99966<br>1 99966<br>1 99966<br>1 99966<br>1 99966<br>1 99966<br>1  | 594           990           900           901           1518           1686           954           300           546           801           738           1506           225           864           1023           1725           1098           2358           1674           -           1110           582           57666           1806  | (+)             | 98385<br>97324<br>97324<br>97324<br>98738<br>100<br>9773<br>99248<br>97248<br>97248<br>97248<br>97248<br>97248<br>97248<br>97333<br>97403<br>98258<br>97374<br>98235<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97397<br>97377<br>97577<br>97577<br>975777<br>9757777777777   | Na12-161         10006         1009-1           Na12-161         81006         1009-1           Na12-181         810165         1005-1           Na12-181         81016         1005-1           Na12-191         81546         1005-1           Na12-191         81546         1817           Na12-191         81546         1817           Na12-192         81511         1606-1           Na12-194         81576         1837           Na12-194         81515         1606-1           Na12-194         91037         1912           Na12-194         91037         1912           Na12-204         90371         19230           Na12-201         90371         19510           Na12-201         90371         19510           Na12-201         90521         1966           Na12-201         90521         19610           Na12-201         90531         1932           Na12-201         90541         1932           Na12-201         90453         1933           Na12-201         90453         1934           Na12-201         1934         1932           Na12-201 <td< th=""><th>900<br/>900<br/>1518<br/>1611<br/>1518<br/>954<br/>534<br/>801<br/>138<br/>801<br/>1396<br/>225<br/>864<br/>1305<br/>1355<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>1036<br/>100</th><th>(+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)          
(+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)</th><th>98.228         No.           94.257         No.           94.257         No.           98.738         No.           98.734         No.           97.238         No.           97.238         No.           97.238         No.           97.238         No.           97.020         No.           97.020         No.           99.020         No.           99.031         No.           99.032         No.           99.533         No.           99.533         No.           99.533         No.           99.533         No.           99.533         No.           99.54         No.           94.847         No.           95.014         No.           96.409         No.           95.573         No.           95.573         No.           95.94.47         No.</th><th>bH1-186         [800           bH1-187         [810           bH1-188         [828           bH1-188         [828           bH1-188         [826           bH1-188         [826           bH1-191         [856           bH1-191         [856           bH1-192         [856           bH1-193         [876           bH1-194         [885           bH1-195         [167           bH1-196         [167           bH1-197         [191           bH1-198         [191           bH1-199         [192           bH1-199         [193           bH1-190         [194           bH1-190         [194           bH1-201         [197           bH1-202         [196           bH1-203         [198]           bH1-204         [206           bH1-205         [207           bH1-204         [206           bH1-205         [207           bH1-206         [207           bH1-206         [207           bH1-206         [208           bH1-206         [207           bH1-206         [208     <th>11         18/07/0         900         900           04/05275         15/18         04/2527         15/18         04/252           05/18/152         04/18/257         15/18         04/18/25         04/18/25           05/18/152         05/18/162         05/18/162         05/18/162         05/18/162           05/18/152         05/18/162         05/18/162         05/18/162         05/18/162           05/18/162         05/18/162         05/18/162         05/18/162         05/18/162           05/18/162         05/18/162         05/18/162         05/18/162         05/18/162           05/18/162         05/18/162         05/18/162         05/18/162         05/18/162           05/18/162         05/18/162         05/18/162         05/18/162         05/18/162           05/18/162         05/18/162         05/18/162         05/18/162         05/18/162           05/18/162         05/18/162         05/18/162         05/18/162         05/18/162           05/18/162         05/18/162         05/18/162         05/18/162         05/18/162           05/18/162         05/18/162         05/18/162         05/18/162         05/18/162           05/18/162         05/18/162         05/18/162         05/18/16</th><th>(+)           (+)</th><th>98.328         9           94.257         1           94.257         1           98.718         1           98.718         1           98.738         2           98.738         2           98.738         2           98.738         2           99.738         2           99.733         2           99.733         2           99.733         2           99.733         2           99.733         2           99.733         2           99.733         2           99.733         2           99.733         2           99.733         2           99.733         2           99.733         2           99.733         2           99.733         2           99.733         2           99.734         2           99.735         2           99.737         2           99.738         2           99.739         2           99.739         2           99.730         2           99.731         2     <th>well-1:8:1         172565         8017           well-1:8:1         802014         18367           well-1:8:1         812014         18367           well-1:8:1         81376         1847           well-1:8:1         81376         1847           well-1:8:1         81376         1847           well-1:8:1         81376         1847           well-1:9:1         81561         8157           well-1:9:1         81561         8157           well-1:9:1         81561         8157           well-1:9:1         81561         8157           well-1:9:1         91572         1922           well-1:9:1         91572         1922           well-1:9:1         91525         1922           well-1:9:1         91526         1922           well-1:9:1         91561         19752</th><th><math display="block"> \begin{array}{cccccccccccccccccccccccccccccccccccc</math></th><th><math display="block">\begin{array}{c} +) &amp; 98.98 + 0 \\ +) &amp; 97.37 \times 0 \\ +) &amp; 97.37 \times 0 \\ +) &amp; 99.22 \\ +) &amp; 99.87 \\ +) &amp; 99.87 \\ +) &amp; 99.87 \\ +) &amp; 99.92 \\ +) &amp; 99.88 \\ +) &amp; 99.92 \\ +) &amp; 99.88 \\ +) &amp; 99.92 \\ +) &amp; 99.88 \\ +) &amp; 99.92 \\ +) &amp; 99.82 \\ +) &amp; 95.85 \\</math></th><th>Swelt2           Swelt2           Sw</th><th>148         1744           148         1846           148         1846           148         1848           148         1849           149         1847           149         1847           149         1847           149         1847           149         1859           149         18759           149         18759           149         18759           149         18759           159         1847           159         191           150         1947           150         1947           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943     &lt;</th><th>2   8006 <br/>9   81646<br/>9   81646<br/>9   85245<br/>9   85245<br/>9   85245<br/>9   85245<br/>9   85245<br/>9   84823<br/>2   8940<br/>9   91473<br/>1   9311<br/>9   91473<br/>9   91473<br/>9   91473<br/>9   91473<br/>9   91473<br/>9   91473<br/>1   9314<br/>9   91473<br/>1   9314<br/>1   9314<br/>1  </th><th>900<br/>1518<br/>1677<br/>558<br/>557<br/>555<br/>801<br/>1506<br/>225<br/>870<br/>1035<br/>450<br/>1035<br/>450<br/>1035<br/>450<br/>1023<br/>1725<br/>1098<br/>2403<br/>1674<br/>-<br/>-<br/>-<br/>-<br/>-<br/>-<br/>-<br/>-<br/>-<br/>-<br/>-<br/>-<br/>-</th><th>(+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)</th><th>96.238<br/>97.317<br/>98.423<br/>93.296<br/>94.565<br/>94.565<br/>99.202<br/>94.03<br/>98.616<br/>97.093<br/>98.658<br/>97.093<br/>98.658<br/>95.399<br/>95.399<br/>96.02<br/>97.846<br/>95.373<br/>96.505<br/>96.373<br/>96.469<br/>95.889</th></th></th></td<>  
   | 900<br>900<br>1518<br>1611<br>1518<br>954<br>534<br>801<br>138<br>801<br>1396<br>225<br>864<br>1305<br>1355<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>1036<br>100     | (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)  | 98.228         No.           94.257         No.           94.257         No.           98.738         No.           98.734         No.           97.238         No.           97.238         No.           97.238         No.           97.238         No.           97.020         No.           97.020         No.           99.020         No.           99.031         No.           99.032         No.           99.533         No.           99.533         No.           99.533         No.           99.533         No.           99.533         No.           99.54         No.           94.847         No.           95.014         No.           96.409         No.           95.573         No.           95.573         No.           95.94.47         No.  
   
  | bH1-186         [800           bH1-187         [810           bH1-188         [828           bH1-188         [828           bH1-188         [826           bH1-188         [826           bH1-191         [856           bH1-191         [856           bH1-192         [856           bH1-193         [876           bH1-194         [885           bH1-195         [167           bH1-196         [167           bH1-197         [191           bH1-198         [191           bH1-199         [192           bH1-199         [193           bH1-190         [194           bH1-190         [194           bH1-201         [197           bH1-202         [196           bH1-203         [198]           bH1-204         [206           bH1-205         [207           bH1-204         [206           bH1-205         [207           bH1-206         [207           bH1-206         [207           bH1-206         [208           bH1-206         [207           bH1-206         [208 <th>11         18/07/0         900         900           04/05275         15/18         04/2527         15/18         04/252           05/18/152         04/18/257         15/18         04/18/25         04/18/25           05/18/152         05/18/162         05/18/162         05/18/162         05/18/162           05/18/152         05/18/162         05/18/162         05/18/162         05/18/162           05/18/162         05/18/162         05/18/162         05/18/162         05/18/162           05/18/162         05/18/162         05/18/162         05/18/162         05/18/162           05/18/162         05/18/162         05/18/162         05/18/162         05/18/162           05/18/162         05/18/162         05/18/162         05/18/162         05/18/162           05/18/162         05/18/162         05/18/162         05/18/162         05/18/162           05/18/162         05/18/162         05/18/162         05/18/162         05/18/162           05/18/162         05/18/162         05/18/162         05/18/162         05/18/162           05/18/162         05/18/162         05/18/162         05/18/162         05/18/162           05/18/162         05/18/162     
   05/18/162         05/18/16</th> <th>(+)           (+)</th> <th>98.328         9           94.257         1           94.257         1           98.718         1           98.718         1           98.738         2           98.738         2           98.738         2           98.738         2           99.738         2           99.733         2           99.733         2           99.733         2           99.733         2           99.733         2           99.733         2           99.733         2           99.733         2           99.733         2           99.733         2           99.733         2           99.733         2           99.733         2           99.733         2           99.733         2           99.734         2           99.735         2           99.737         2           99.738         2           99.739         2           99.739         2           99.730         2           99.731         2     <th>well-1:8:1         172565         8017           well-1:8:1         802014         18367           well-1:8:1         812014         18367           well-1:8:1         81376         1847           well-1:8:1         81376         1847           well-1:8:1         81376         1847           well-1:8:1         81376         1847           well-1:9:1         81561         8157           well-1:9:1         81561         8157           well-1:9:1         81561         8157           well-1:9:1         81561         8157           well-1:9:1         91572         1922           well-1:9:1         91572         1922           well-1:9:1         91525         1922           well-1:9:1         91526         1922           well-1:9:1         91561         19752</th><th><math display="block"> \begin{array}{cccccccccccccccccccccccccccccccccccc</math></th><th><math display="block">\begin{array}{c} +) &amp; 98.98 + 0 \\ +) &amp; 97.37 \times 0 \\ +) &amp; 97.37 \times 0 \\ +) &amp; 99.22 \\ +) &amp; 99.87 \\ +) &amp; 99.87 \\ +) &amp; 99.87 \\ +) &amp; 99.92 \\ +) &amp; 99.88 \\ +) &amp; 99.92 \\ +) &amp; 99.88 \\ +) &amp; 99.92 \\ +) &amp; 99.88 \\ +) &amp; 99.92 \\ +) &amp; 99.82 \\ +) &amp; 95.85 \\</math></th><th>Swelt2           Swelt2           Sw</th><th>148         1744           148         1846           148         1846           148         1848           148         1849           149         1847           149         1847           149         1847           149         1847           149         1859           149         18759           149         18759           149         18759           149         18759           159         1847           159         191           150         1947           150         1947           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943     &lt;</th><th>2   8006 <br/>9   81646<br/>9   81646<br/>9   85245<br/>9   85245<br/>9   85245<br/>9   85245<br/>9   85245<br/>9   84823<br/>2   8940<br/>9   91473<br/>1   9311<br/>9   91473<br/>9   91473<br/>9   91473<br/>9   91473<br/>9   91473<br/>9   91473<br/>1   9314<br/>9   91473<br/>1   9314<br/>1   9314<br/>1  </th><th>900<br/>1518<br/>1677<br/>558<br/>557<br/>555<br/>801<br/>1506<br/>225<br/>870<br/>1035<br/>450<br/>1035<br/>450<br/>1035<br/>450<br/>1023<br/>1725<br/>1098<br/>2403<br/>1674<br/>-<br/>-<br/>-<br/>-<br/>-<br/>-<br/>-<br/>-<br/>-<br/>-<br/>-<br/>-<br/>-</th><th>(+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)</th><th>96.238<br/>97.317<br/>98.423<br/>93.296<br/>94.565<br/>94.565<br/>99.202<br/>94.03<br/>98.616<br/>97.093<br/>98.658<br/>97.093<br/>98.658<br/>95.399<br/>95.399<br/>96.02<br/>97.846<br/>95.373<br/>96.505<br/>96.373<br/>96.469<br/>95.889</th></th>  
   | 11         18/07/0         900         900           04/05275         15/18         04/2527         15/18         04/252           05/18/152         04/18/257         15/18         04/18/25         04/18/25           05/18/152         05/18/162         05/18/162         05/18/162         05/18/162           05/18/152         05/18/162         05/18/162         05/18/162         05/18/162           05/18/162         05/18/162         05/18/162         05/18/162         05/18/162           05/18/162         05/18/162         05/18/162         05/18/162         05/18/162           05/18/162         05/18/162         05/18/162         05/18/162         05/18/162           05/18/162         05/18/162         05/18/162         05/18/162         05/18/162           05/18/162         05/18/162         05/18/162         05/18/162         05/18/162           05/18/162         05/18/162         05/18/162         05/18/162         05/18/162           05/18/162         05/18/162         05/18/162         05/18/162         05/18/162           05/18/162         05/18/162         05/18/162         05/18/162         05/18/162           05/18/162         05/18/162         05/18/162         05/18/16   | (+)            | 98.328         9           94.257         1           94.257         1           98.718         1           98.718         1           98.738         2           98.738         2           98.738         2           98.738         2           99.738         2           99.733         2           99.733         2           99.733         2           99.733         2           99.733         2           99.733         2           99.733         2           99.733         2           99.733         2           99.733         2           99.733         2           99.733         2           99.733         2           99.733         2           99.733         2           99.734         2           99.735         2           99.737         2           99.738         2           99.739         2           99.739         2           99.730         2           99.731         2 <th>well-1:8:1         172565         8017           well-1:8:1         802014         18367           well-1:8:1         812014         18367           well-1:8:1         81376         1847           well-1:8:1         81376         1847           well-1:8:1         81376         1847           well-1:8:1         81376         1847           well-1:9:1         81561         8157           well-1:9:1         81561         8157           well-1:9:1         81561         8157           well-1:9:1         81561         8157           well-1:9:1         91572         1922           well-1:9:1         91572         1922           well-1:9:1         91525         1922           well-1:9:1         91526         1922           well-1:9:1         91561         19752</th> <th><math display="block"> \begin{array}{cccccccccccccccccccccccccccccccccccc</math></th> <th><math display="block">\begin{array}{c} +) &amp; 98.98 + 0 \\ +) &amp; 97.37 \times 0 \\ +) &amp; 97.37 \times 0 \\ +) &amp; 99.22 \\ +) &amp; 99.87 \\ +) &amp; 99.87 \\ +) &amp; 99.87 \\ +) &amp; 99.92 \\ +) &amp; 99.88 \\ +) &amp; 99.92 \\ +) &amp; 99.88 \\ +) &amp; 99.92 \\ +) &amp; 99.88 \\ +) &amp; 99.92 \\ +) &amp; 99.82 \\ +) &amp; 95.85 \\</math></th> <th>Swelt2           Swelt2           Sw</th> <th>148         1744           148         1846           148         1846           148         1848           148         1849           149         1847           149         1847           149         1847           149         1847           149         1859           149         18759           149         18759           149         18759           149         18759           159         1847           159         191           150         1947           150         1947           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943     &lt;</th> <th>2   8006 <br/>9   81646<br/>9  
81646<br/>9   85245<br/>9   85245<br/>9   85245<br/>9   85245<br/>9   85245<br/>9   84823<br/>2   8940<br/>9   91473<br/>1   9311<br/>9   91473<br/>9   91473<br/>9   91473<br/>9   91473<br/>9   91473<br/>9   91473<br/>1   9314<br/>9   91473<br/>1   9314<br/>1   9314<br/>1  </th> <th>900<br/>1518<br/>1677<br/>558<br/>557<br/>555<br/>801<br/>1506<br/>225<br/>870<br/>1035<br/>450<br/>1035<br/>450<br/>1035<br/>450<br/>1023<br/>1725<br/>1098<br/>2403<br/>1674<br/>-<br/>-<br/>-<br/>-<br/>-<br/>-<br/>-<br/>-<br/>-<br/>-<br/>-<br/>-<br/>-</th> <th>(+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)</th> <th>96.238<br/>97.317<br/>98.423<br/>93.296<br/>94.565<br/>94.565<br/>99.202<br/>94.03<br/>98.616<br/>97.093<br/>98.658<br/>97.093<br/>98.658<br/>95.399<br/>95.399<br/>96.02<br/>97.846<br/>95.373<br/>96.505<br/>96.373<br/>96.469<br/>95.889</th>   | well-1:8:1         172565         8017           well-1:8:1         802014         18367           well-1:8:1         812014         18367           well-1:8:1         81376         1847           well-1:8:1         81376         1847           well-1:8:1         81376         1847           well-1:8:1         81376         1847           well-1:9:1         81561         8157           well-1:9:1         81561         8157           well-1:9:1         81561         8157           well-1:9:1         81561         8157           well-1:9:1         91572         1922           well-1:9:1         91572         1922           well-1:9:1         91525         1922           well-1:9:1         91526         1922           well-1:9:1         91561         19752                                    
   | $ \begin{array}{cccccccccccccccccccccccccccccccccccc$   | $\begin{array}{c} +) & 98.98 + 0 \\ +) & 97.37 \times 0 \\ +) & 97.37 \times 0 \\ +) & 99.22 \\ +) & 99.22 \\ +) & 99.22 \\ +) & 99.22 \\ +) & 99.22 \\ +) & 99.87 \\ +) & 99.87 \\ +) & 99.87 \\ +) & 99.92 \\ +) & 99.88 \\ +) & 99.92 \\ +) & 99.88 \\ +) & 99.92 \\ +) & 99.88 \\ +) & 99.92 \\ +) & 99.82 \\ +) & 95.85 \\$   | Swelt2           Sw  
   | 148         1744           148         1846           148         1846           148         1848           148         1849           149         1847           149         1847           149         1847           149         1847           149         1859           149         18759           149         18759           149         18759           149         18759           159         1847           159         191           150         1947           150         1947           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943           150         1943     <   
   | 2   8006 <br>9   81646<br>9   81646<br>9   85245<br>9   85245<br>9   85245<br>9   85245<br>9   85245<br>9   84823<br>2   8940<br>9   91473<br>1   9311<br>9   91473<br>9   91473<br>9   91473<br>9   91473<br>9   91473<br>9   91473<br>1   9314<br>9   91473<br>1   9314<br>1  | 900<br>1518<br>1677<br>558<br>557<br>555<br>801<br>1506<br>225<br>870<br>1035<br>450<br>1035<br>450<br>1035<br>450<br>1023<br>1725<br>1098<br>2403<br>1674<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-   | (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)   | 96.238<br>97.317<br>98.423<br>93.296<br>94.565<br>94.565<br>99.202<br>94.03<br>98.616<br>97.093<br>98.658<br>97.093<br>98.658<br>95.399<br>95.399<br>96.02<br>97.846<br>95.373<br>96.505<br>96.373<br>96.469<br>95.889  
  |
| Cample kinse (Cop-BSR)           Schlafer (Cop-BR)           Schlafer (Cop-BR)           Schlafer (Cop-BR)           Adayrin (Cop-BR)           EX Type 1- membran glycoportein, protective an tigen (Cop-BSR)           Adayrin Kike protein (Cop-BR)           Schlafer (Cop-BR)           Scriph L32 (Cop-SL1)           Spedietical protein (Cop-BR)           Li beta inhibitor (Cop-BR)           Malyrin (Cop-BR)           Malyrin (Cop-BR)           Malyrin (Cop-BR)           Schlafer (Cop-BR)           Malyrin (Cop-BR)           Malyrin (Cop-BR)           Malyrin (Cop-BR)           Schlafer (Cop-BR)           Schlafer (Cop-BR)           Malyrin (Cop-BR)           Schlafer (Cop-BR)           Schlafer (Cop-BR)           Schlafer (Cop-BR)           Schlafer (Cop-CR)           Schlafer (Cop-CR)           Sc  | A 57R<br>B1R<br>B2R<br>B4R<br>B5R<br>B6R<br>B7R<br>B7R<br>B7R<br>B7R<br>B7R<br>B19R<br>B12R<br>B12R<br>B12R<br>B12R<br>B12R<br>B12R<br>B12R<br>B12R<br>B13R<br>B19R<br>B29R<br>C12L<br>C14L<br>B205R<br>C19L<br>C19L<br>C19L   | CPXV195<br>CPXV196<br>CPXV197<br>CPXV197<br>CPXV198<br>CPXV199<br>CPXV201<br>CPXV201<br>CPXV201<br>CPXV203<br>CPXV203<br>CPXV204<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV215<br>CPXV21                      | NoF1-18           NoF1-18           NoF1-18           NoF1-18           NoF1-19           NoF1-20   | 1788-07         1794-00           1980-1794-00         180270           180270         182206           180270         182206           180270         182206           18420         185200           18420         185200           185270         188370           185771         188371         
 185771         188371           185771         188371           185771         188371           185877         188371           18954         19851           18954         19851           19954         199537           19954         199537           19954         199537           19954         199537           19954         199537           19954         199537           19954         199537           19954         199537           19954         199537           19954         199537           19953         199537           19954         199537           19954         199537           19953         199537           19954         199537           19953         199   | 594           900           900           910           951           1686           954           300           546           801           738           1506           861           225           864           1025           864           1025           1725           1098           2358           2358           1674           -           1110           586           1806           969   | (+)           (+) | 98385<br>97324<br>97324<br>97324<br>98738<br>100<br>99.7504<br>99.7504<br>99.02<br>99.02<br>99.02<br>99.02<br>99.02<br>99.02<br>99.02<br>99.02<br>99.02<br>99.02<br>99.02<br>99.03<br>99.03<br>99.03<br>99.03<br>99.03<br>99.25<br>97.84<br>97.84<br>97.84<br>92.55<br>92.55<br>95.81<br>95.958<br>95.958<br>98.137   | Na12-26         1000         1000           Na12-161         80006         10009           Na12-2168         12005         11005         1125           Na12-2169         125208         18440         1525           Na12-219         18526         1857         1837           Na12-219         18556         1857         1837           Na12-219         18556         1857         1837           Na12-219         19516         1933         1947         1947           Na12-219         19516         1933         1947         1947         1947           Na12-219         1947         19523         19407         1942         19407         1942         1947   
   
   
   | 900<br>900<br>1518<br>1611<br>1518<br>954<br>534<br>954<br>534<br>801<br>1366<br>1306<br>1306<br>1305<br>1450<br>1305<br>1450<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1     | (+)         (+)            | 98.228         No.           94.257         No.           94.257         No.           98.738         No.           98.234         No.           97.238         No.           97.238         No.           97.233         No.           99.0248         No.           99.0258         No.           99.258         No.           99.258         No.           99.258         No.           99.258         No.           99.259         No.           99.259         No.           99.259         No.           99.259         No.           99.259         No.           99.259         No.           99.250         No.           99.252         No.           99.252         No.           99.252         No.           94.845         No.           96.573         No.           96.573         No.           96.575         No.           96.575         No.           96.575         No.           96.575         No.           95.58         No.     <  
   
  | bH1-186         [800           bH1-187         [810           bH1-188         [825           bH1-198         [826           bH1-198         [826           bH1-198         [826           bH1-198         [826           bH1-198         [826           bH1-191         [876           bH1-191         [876           bH1-192         [868           bH1-194         [885           bH1-195         [904           bH1-196         [904           bH1-196         [904           bH1-196         [904           bH1-196         [904           bH1-196         [904           bH1-201         [920           bH1-202         [907           bH1-204         [206           bH1-205         [2025           bH1-206         [2025           bH1-207         [204           bH1-208         [202           bH1-208         [202           bH1-208         [202           bH1-208         [202           bH1-208         [204           bH1-208         [204      >bH1-208         [204   
   
   | 71 [18770 900. 900<br>0182575 [1518 0182575 [1518 0182575 [1518 0182575 [1518 0182575 [1518 018555 [15452 045]<br>051555 [154252 16754 84] [156271 534<br>451 [156751 840] [157653 840]<br>141 [158471 738 [157653 840]<br>141 [15847 [159763 840] [159763 840]<br>159 [159763 840] [159763 840]<br>159 [159763 840] [159763 840]<br>159 [15976 840] [15976 840] [15976 840]<br>159 [15976 840] [15976 840] [15976 840] [15976 840]<br>159 [15976 840] [159   | (+)             
  | 98.128         9           94.275         2           98.711         2           98.713         2           98.714         2           98.715         2           98.717         2           98.718         2           98.718         2           98.717         2           99.824         2           99.9024         3           99.9025         3           99.9033         2           99.9033         2           99.9033         2           90.9033         2           90.9033         2           90.9033         2           90.9034         2           90.9035         2           90.9035         2           90.9035         2           90.903         2           90.903         2           90.903         2           90.903         2           90.903         2           90.903         2           90.903         2           90.903         2           90.903         2           90.903         2 </th <th>well-1:8:1         172565         8011           well-1:8:1         802361         8017           well-1:8:1         802374         88367           well-1:9:1         81374         88374           well-1:9:1         913751         91375           well-1:9:1         913751         91374           well-1:9:1         91374         91374           well-1:9:1         91374         91374           well-1:9:1         91374         91374           well-1:0:1         91374         91374           well-1:0:2         91375         93377           well-1:0:2         2013737         201374           well-1:0:2         201374         211632           well-1:0:2         201374         211632</th> <th><math display="block"> \begin{array}{cccccccccccccccccccccccccccccccccccc</math></th> <th><math display="block">\begin{array}{c} +) &amp; -98.92, +) \\ +) &amp; -97.33, +) \\ +) &amp; -96.23, +) \\ +) &amp; -96.23, +) \\ +) &amp; -97.33, +) \\ +) &amp; -98.73, +) \\ +) &amp; -98.73, +) \\ +) &amp; -98.83, +) \\ +) &amp; -99.20, +) \\ +) &amp; -98.84, +) \\ +) &amp; -99.20, +) \\ +) &amp; -98.64, +) \\ +) &amp; -99.20, +) \\ +) &amp; -98.64, +) \\ +) &amp; -99.20, +) \\ +) &amp; </math></th> <th>SS         Swelf2           SS         Swelf2           Swelf2         Swelf2           SS         Swelf2           SS         Swelf2           SS         Swelf2           SS         Swelf2           SS         Swelf2           SS         Swelf2           SWelf2         Swelf2</th> <th>180         1744           180         1794           181         180           188         1819           183         1819           183         1819           193         1837           193         1837           193         1837           193         1837           194         1859           195         1841           196         1847           197         1903           198         1915           199         1915           199         1915           1915         1915           1915         1915           1915         1915           1915         1915           1915         1915           1915         1915           1915         1915           1915         1915           1915         1915           1915         1915           1915         1915           1915         1915           1915         1915           1917         1913           1916         1915           1917         191</th> <th>2  8066 <br/>9  81646]<br/>9  81646]<br/>9  81646]<br/>9  85245<br/>9  85245<br/>9  8462]<br/>9  8462]</th> <th>900<br/>1518<br/>1677<br/>1547<br/>1557<br/>555<br/>801<br/>678<br/>1506<br/>225<br/>870<br/>870<br/>981<br/>1023<br/>1725<br/>1098<br/>2403<br/>1674<br/>-<br/>1122<br/>582<br/>1740<br/>969<br/>9426</th> <th>(+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)</th> <th>96.238<br/>97.317<br/>98.423<br/>93.296<br/>93.296<br/>93.296<br/>94.03<br/>98.616<br/>97.093<br/>98.616<br/>97.093<br/>98.616<br/>97.093<br/>98.616<br/>97.093<br/>98.616<br/>95.399<br/>98.235<br/>97.909<br/>98.235<br/>97.909<br/>98.235<br/>97.909<br/>94.809<br/>96.02<br/>97.846<br/>95.855<br/>98.758</th>  
   | well-1:8:1         172565         8011           well-1:8:1         802361         8017           well-1:8:1         802374         88367           well-1:9:1         81374         88374           well-1:9:1         913751         91375           well-1:9:1         913751         91374           well-1:9:1         91374         91374           well-1:9:1         91374         91374           well-1:9:1         91374         91374           well-1:0:1         91374         91374           well-1:0:2         91375         93377           well-1:0:2         2013737         201374           well-1:0:2         201374         211632           well-1:0:2         201374         211632   | $ \begin{array}{cccccccccccccccccccccccccccccccccccc$   | $\begin{array}{c} +) & -98.92, +) \\ +) & -97.33, +) \\ +) & -96.23, +) \\ +) & -96.23, +) \\ +) & -97.33, +) \\ +) & -98.73, +) \\ +) & -98.73, +) \\ +) & -98.83, +) \\ +) & -99.20, +) \\ +) & -98.84, +) \\ +) & -99.20, +) \\ +) & -98.64, +) \\ +) & -99.20, +) \\ +) & -98.64, +) \\ +) & -99.20, +) \\ +) & $  | SS         Swelf2           SS         Swelf2           Swelf2         Swelf2           SS         Swelf2           SS         Swelf2           SS         Swelf2           SS         Swelf2           SS         Swelf2           SS         Swelf2           SWelf2         Swelf2  
   | 180         1744           180         1794           181         180           188         1819           183         1819           183         1819           193         1837           193         1837           193         1837           193         1837           194         1859           195         1841           196         1847           197         1903           198         1915           199         1915           199         1915           1915         1915           1915         1915           1915         1915           1915         1915           1915         1915           1915         1915           1915         1915           1915         1915           1915         1915           1915         1915           1915         1915           1915         1915           1915         1915           1917         1913           1916         1915           1917         191  
   | 2  8066 <br>9  81646]<br>9  81646]<br>9  81646]<br>9  85245<br>9  85245<br>9  8462]<br>9  8462]   | 900<br>1518<br>1677<br>1547<br>1557<br>555<br>801<br>678<br>1506<br>225<br>870<br>870<br>981<br>1023<br>1725<br>1098<br>2403<br>1674<br>-<br>1122<br>582<br>1740<br>969<br>9426   
   | (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)   | 96.238<br>97.317<br>98.423<br>93.296<br>93.296<br>93.296<br>94.03<br>98.616<br>97.093<br>98.616<br>97.093<br>98.616<br>97.093<br>98.616<br>97.093<br>98.616<br>95.399<br>98.235<br>97.909<br>98.235<br>97.909<br>98.235<br>97.909<br>94.809<br>96.02<br>97.846<br>95.855<br>98.758   |
| Cample kinse (Cop-A5.8)<br>Schlart (Cop-B1R)<br>Schlart (Cop-B1R)<br>BEY type-1 menhane glycopotelia protective an tigen (Cop-B5R)<br>Malyrini (Cop-B4R)<br>EV type-1 menhane glycopotelia protective an tigen (Cop-B5R)<br>Malyrini Kup-B4R)<br>Schlart HN-q receptor-like protein (Cop-B5R)<br>Beh-Oncider approxise regulator (Cop-B5R)<br>Beh-Oncider approxise regulator (Cop-B5R)<br>Ed-Schlart approxise regulator (Cop-B5R)<br>Ed-Schlart approxise regulator (Cop-B5R)<br>Beyndreical protein (Cop-B1R)<br>Serrflar Kusse (Cop-B12R)<br>Serrflar Kusse (Cop-B12R)<br>Serrflar Kusse (Cop-B12R)<br>Hypothesial protein (Cop-C16L)<br>L-1 beta inhibme (Cop-B13R)<br>H-1 beta inhibme neceptor glycopotetin (Cop-B19R)<br>Malyrin (Cop-B13R)<br>(Cop-B13R)<br>(CY+B-214<br>Hech-Bise protein (KVA-167)<br>Bypothesial protein (Cop-C14L)<br>Serrin 1.23 (Cop-K2L)<br>Bypothesial protein (Cop-C14L)<br>Serrin 1.23 (Cop-K2L)<br>Bypothesial protein (Cop-C14L)<br>Serrin 1.23 (Cop-K2L)<br>Bypothesial protein<br>(Cop-C14L)<br>Serrin 1.23 (Cop-K2L)<br>Bypothesial protein<br>(Cop-C14L)<br>Serrin 1.23 (Cop-K2L)<br>Bypothesial protein (Cop-C14L)<br>Serrin 1.23 (Cop-K2L)<br>Bypothesial protein<br>(Cop-C14L)<br>Serrin 1.23 (Cop-K2L)<br>Bypothesial protein<br>(Cop-C14L)<br>Serrin 1.23 (Cop-K2L)<br>Bypothesial protein<br>Malyrin (Cop-C14L)<br>Serrin 1.23 (Cop-K2L)<br>Bypothesial protein<br>Malyrin (Cop-C14L)<br>Serrin 1.23 (Cop-K2L)<br>Bypothesial protein<br>Malyrin (Cop-C14L)<br>Serrin 1.23 (Cop-K2L)<br>Bypothesial protein<br>(Cop-C14L)<br>Serrin 1.23 (Cop-K2L)  | A 57R<br>B1R<br>B2R<br>B4R<br>B5R<br>B5R<br>B5R<br>B5R<br>B7<br>B5R<br>B1R<br>B1R<br>B1R<br>B1R<br>B1R<br>B1R<br>B1R<br>B1   | CPXV195<br>CPXV196<br>CPXV197<br>CPXV197<br>CPXV198<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV20                      | NoF1-18-18<br>NoF1-18-18<br>NoF1-18-18<br>NoF1-18-18<br>NoF1-19-18<br>NoF1-19-18<br>NoF1-19-18<br>NoF1-19-18<br>NoF1-19-18<br>NoF1-19-18<br>NoF1-19-18<br>NoF1-19-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18  | 1 1786/0 179460<br>1 1786/0 18209/6<br>1 1877/0 18206/6<br>1 1870/0 18206/<br>1 1874/0 18206/<br>1 1874/0 185102<br>1 1874/0 185102<br>1 1874/0 185102<br>1 1877/1 1863/0<br>1 1857/1 1863/0<br>1 1857/1 1863/0<br>1 1877/1 1863/0<br>1 1877/1
1863/0<br>1 1877/1 1877/1<br>1 1877/1<br>1 1877/1 1877/1<br>1 1                                     | 594           900           1518           1686           954           300           546           801           738           1606           225           864           1035           1035           450           978           1023           1023           1725           1003           1674           -           1110           582           5766           1806           969           -           462   | (+)             | 98385<br>97324<br>97324<br>97324<br>97324<br>9739<br>9739<br>9759<br>9759<br>9759<br>97333<br>97333<br>97333<br>9702<br>99002<br>9403<br>97333<br>9702<br>98258<br>97674<br>99002<br>98258<br>97674<br>99002<br>97547<br>97674<br>97574<br>97587<br>97587<br>97587<br>97587<br>97587<br>97587<br>97587<br>97587<br>97587<br>97587<br>97587<br>97587<br>97587<br>97587<br>97587<br>97587<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>975977<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>97597<br>975977<br>975977<br>975977<br>975977<br>975977<br>975977<br>975977<br>975977<br>975977<br>975977<br>975977<br>975977<br>975977<br>975977<br>975977<br>975977<br>975977<br>975977<br>975977<br>975977<br>975977<br>975977<br>975977<br>975977<br>975977<br>975977<br>975977<br>975977<br>975977<br>975977<br>9759777<br>975977<br>9759777<br>975977<br>9759777<br>9759777<br>9759777<br>9759777<br>9759777<br>9759777<br>9759777<br>9759777<br>9757777<br>9757777<br>97577777<br>97577777777  | 1200         1200         1200           1201         1200         1200           1202         12100         11005         1120           1202         1202         1200         1200         1200           1202         1202         1200         1200         1200         1200           1202         1202         1200   
   
   | 900<br>900<br>1518<br>1611<br>1518<br>954<br>534<br>801<br>1506<br>225<br>864<br>1355<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1036<br>104<br>105<br>105<br>105<br>105<br>105<br>105<br>105<br>105  
  | (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)  | 98.228         No.           94.257         No.           94.257         No.           98.24         No.           98.24         No.           97.238         No.           97.238         No.           97.238         No.           97.238         No.           97.333         No.           99.022         No.           99.025         No.           97.033         No.           99.025         No.           97.039         No.           97.053         No.           97.213         No.           95.024         No.           95.031         No.           94.405         No.           95.41         No.           95.51         No.           95.51         No.           95.53         No.           95.547         No.           95.547         No.           95.547         No.  
   
  | bill-186 [1800<br>bill-187 [180-bill-187]<br>bill-187 [180-bill-188]<br>[180-bill-188]<br>[180-bill-189]<br>[186-bill-199]<br>[186-bill-199]<br>[186-bill-199]<br>[180-bill-199]<br>[180-bill-199]<br>[180-bill-199]<br>[180-bill-199]<br>[180-bill-199]<br>[180-bill-199]<br>[180-bill-199]<br>[180-bill-199]<br>[180-bill-199]<br>[180-bill-199]<br>[180-bill-199]<br>[180-bill-199]<br>[180-bill-199]<br>[180-bill-199]<br>[180-bill-199]<br>[180-bill-199]<br>[180-bill-199]<br>[180-bill-199]<br>[180-bill-199]<br>[180-bill-199]<br>[180-bill-199]<br>[180-bill-199]<br>[180-bill-199]<br>[180-bill-199]<br>[180-bill-199]<br>[180-bill-199]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[180-bill-190]<br>[18  
   
   | 11, 1897/0         900.         900.           04, 125.57         151.84         04, 125.57         151.84           251, 164.23         151.44         151.44         151.44           521, 151.23         151.45         151.45         151.45           521, 151.23         151.45         151.45         151.45           521, 151.25         151.45         151.45         151.45           521, 151.25         151.45         151.45         151.45           521, 151.25         151.97         151.45         151.45           521, 151.25         151.97         151.45         151.45           521, 151.25         151.97         151.45         151.45           521, 151.20         151.97         151.45         151.45           521, 151.25         151.97         141.45         151.45           521, 151.26         161.99         151.45         111.33           522, 151.26         161.40         151.46         151.46           522, 151.26         161.94         111.45         111.45           522, 151.26         161.40         111.46         111.46           521, 151.26         161.40         111.45         111.46           521, 151.   | (+)            | 98.328         9           94.375         9           98.71         9           98.71         9           98.71         9           98.71         9           98.71         9           98.71         9           98.71         9           98.72         9           98.73         9           99.924         9           99.925         9           99.935         9           99.936         9           99.937         9           99.938         9           99.933         9           99.933         9           99.933         9           99.933         9           99.933         9           99.940         9           99.941         9           99.942         9           99.943         9           99.943         9           99.943         9           99.943         9           99.943         9           99.944         9           99.944         9           99.944         9 <tr< th=""><th>well-1:82         172565         8017           well-1:83         80374         18375           well-1:84         80374         18374           well-1:84         81374         1847           well-1:84         81374         1847           well-1:84         18376         1847           well-1:84         18376         1847           well-1:94         18438         18355           well-1:94         18478   
     1847           well-1:94         18488         18356           well-1:94         18478         1847           well-1:94         18597         1946           well-1:94         19722         1921           well-1:94         19722         1921           well-1:94         19724         1937           well-1:94         19724         1937           well-2:04         19324         1934           well-2:04         19452         1972           well-2:04         19452         1972           well-2:04         19452         1972           well-2:04         21705         2037           well-2:04         21705         2037           well-2:04</th><th><math display="block"> \begin{array}{cccccccccccccccccccccccccccccccccccc</math></th><th><math display="block">\begin{array}{c} (+) &amp; (-) &amp;</math></th><th>55         Swelf285           56         Swelf28           88         Swelf28           88         Swelf28           88         Swelf29           56         Swelf29           57         Swelf29           58         Swelf29           59         Swelf29           20         Swelf29           21         Swelf29           25         Swelf299           26         Swelf299           27         Swelf299           28         Swelf299           29         Swelf22           209         Swelf22           200         Swelf22           210         Swelf22           22         Swelf22           23         Swelf22           33         Swelf22           34         Swelf22           34         Swelf22           55         Swelf23           56         Swelf23           56         Swelf23           56         Swelf23           56         Swelf23           56         Swelf24</th><th>148         1744           148         184           148         184           149         184           149         184           149         184           149         184           149         184           149         184           149         184           141         187           142         183           143         187           144         1875           145         1814           149         192           141         1875           143         187           144         1875           145         1814           146         1915           146         1875           146         1875           147         1904           149         1912           149         1912           149         1912           149         1912           149         1912           149         1912           149         1912           149         1912           149         1912</th><th>2 180061<br/>9 181646<br/>0 183566<br/>9 1816462<br/>1 1816462<br/>9 182645<br/>9 18245<br/>1 18245<br/>1 18245<br/>2 18740<br/>2 18740<br/>2 18740<br/>2 18740<br/>2 18740<br/>2 18740<br/>2 18740<br/>2 18740<br/>2 18910<br/>2 18900<br/>2 189000<br/>2 189000<br/>2 189000<br/>2 189000<br/>2 189000<br/>2 189000<br/>2 18900</th><th>900<br/>1518<br/>1677<br/>558<br/>557<br/>555<br/>801<br/>678<br/>575<br/>1506<br/>225<br/>870<br/>1035<br/>1506<br/>225<br/>870<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1035<br/>1098<br/>2403<br/>1098<br/>2403<br/>1098<br/>2403<br/>1098<br/>2403<br/>1098<br/>2403<br/>1098<br/>2403<br/>1098<br/>2403<br/>1098<br/>2403<br/>1098<br/>2403<br/>1098<br/>2405<br/>1098<br/>2405<br/>1098<br/>2405<br/>1098<br/>1098<br/>2405<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098<br/>1098</th><th>(+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)</th><th>96.238<br/>97.317<br/>98.423<br/>93.296<br/>94.565<br/>98.872<br/>96.889<br/>99.202<br/>94.03<br/>98.616<br/>97.093<br/>98.616<br/>97.093<br/>98.658<br/>95.399<br/>94.03<br/>98.658<br/>95.399<br/>94.809<br/>94.809<br/>94.809<br/>94.809<br/>94.809<br/>94.809<br/>95.855<br/>95.855<br/>98.758<br/>-<br/>-</th></tr<>  
   | well-1:82         172565         8017           well-1:83         80374         18375           well-1:84         80374         18374           well-1:84         81374         1847           well-1:84         81374         1847           well-1:84         18376         1847           well-1:84         18376         1847           well-1:94         18438         18355           well-1:94         18478         1847           well-1:94         18488         18356           well-1:94         18478         1847           well-1:94         18597         1946           well-1:94         19722         1921           well-1:94         19722         1921           well-1:94         19724         1937           well-1:94         19724         1937           well-2:04         19324         1934           well-2:04         19452         1972           well-2:04         19452         1972           well-2:04         19452         1972           well-2:04         21705         2037           well-2:04         21705         2037           well-2:04   | $ \begin{array}{cccccccccccccccccccccccccccccccccccc$   | $\begin{array}{c} (+) & (-) &$   | 55         Swelf285           56         Swelf28           88         Swelf28           88         Swelf28           88         Swelf29           56         Swelf29           57         Swelf29           58         Swelf29           59         Swelf29           20         Swelf29           21         Swelf29           25         Swelf299           26         Swelf299           27         Swelf299           28         Swelf299           29         Swelf22           209         Swelf22           200         Swelf22           210         Swelf22           22         Swelf22           23         Swelf22           33         Swelf22           34         Swelf22           34         Swelf22           55         Swelf23           56         Swelf23           56         Swelf23           56         Swelf23           56         Swelf23           56         Swelf24   
  | 148         1744           148         184           148         184           149         184           149         184           149         184           149         184           149         184           149         184           149         184           141         187           142         183           143         187           144         1875           145         1814           149         192           141         1875           143         187           144         1875           145         1814           146         1915           146         1875           146         1875           147         1904           149         1912           149         1912           149         1912           149         1912           149         1912           149         1912           149         1912           149         1912           149         1912   
  | 2 180061<br>9 181646<br>0 183566<br>9 1816462<br>1 1816462<br>9 182645<br>9 18245<br>1 18245<br>1 18245<br>2 18740<br>2 18740<br>2 18740<br>2 18740<br>2 18740<br>2 18740<br>2 18740<br>2 18740<br>2 18910<br>2 18900<br>2 189000<br>2 189000<br>2 189000<br>2 189000<br>2 189000<br>2 189000<br>2 18900  | 900<br>1518<br>1677<br>558<br>557<br>555<br>801<br>678<br>575<br>1506<br>225<br>870<br>1035<br>1506<br>225<br>870<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1098<br>2403<br>1098<br>2403<br>1098<br>2403<br>1098<br>2403<br>1098<br>2403<br>1098<br>2403<br>1098<br>2403<br>1098<br>2403<br>1098<br>2403<br>1098<br>2405<br>1098<br>2405<br>1098<br>2405<br>1098<br>1098<br>2405<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098<br>1098   | (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)          
(+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)   | 96.238<br>97.317<br>98.423<br>93.296<br>94.565<br>98.872<br>96.889<br>99.202<br>94.03<br>98.616<br>97.093<br>98.616<br>97.093<br>98.658<br>95.399<br>94.03<br>98.658<br>95.399<br>94.809<br>94.809<br>94.809<br>94.809<br>94.809<br>94.809<br>95.855<br>95.855<br>98.758<br>-<br>-   |
| Cample kinss (Cop-A5.8)<br>Schlafer (Cop-B1R)<br>Schlafer (Cop-B1R)<br>Schlafer (Cop-B1R)<br>EX type 1- membran glycopotcin, protective an tigen (Cop-B3R)<br>Malyrini & growthen (Cop-B4R)<br>Schlafe TN-9 arcesptor-like protein (Cop-B3R)<br>Exh-Bahard approduces regulator (Cop-B3R)<br>Exh-Bahard approduces regulator (Cop-B3R)<br>Exh-Bahard approduces (Cop-B3R)<br>Exh-Bahard (Cop-C11A)<br>Expedired approtein<br>Malyrin (Cop-C19A)<br>Exh-Bahard (Cop-C10A)<br>Exh-Bahard (Cop-C10A)<br>Exh-   | A 57R<br>B1R<br>B2R<br>B2R<br>B5R<br>B6R<br>B7R<br>B7R<br>B7R<br>B7R<br>B7R<br>B7R<br>B19R<br>B12R<br>B12R<br>B14R<br>B15R<br>B15R<br>B15R<br>B15R<br>B17L<br>B15R<br>B17L<br>B15R<br>C12L<br>C14L<br>B236C(7L<br>B236C(7L   | CPXV195<br>CPXV196<br>CPXV197<br>CPXV197<br>CPXV197<br>CPXV197<br>CPXV201<br>CPXV201<br>CPXV201<br>CPXV201<br>CPXV203<br>CPXV203<br>CPXV204<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV20                      | NoF1-18-18<br>NoF1-18-18<br>NoF1-18-18<br>NoF1-18-18<br>NoF1-19-18<br>NoF1-19-18<br>NoF1-19-18<br>NoF1-19-18<br>NoF1-19-18<br>NoF1-19-18<br>NoF1-19-18<br>NoF1-19-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NoF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18<br>NOF1-20-18  | 1 788-67 1794-60<br>1 885-77 182296, 5<br>1 882-77 182296, 5<br>1 822-67 182296, 5<br>1 822-60 182296, 1<br>1 822-60 182296, 1<br>1 823-60 182596, 1<br>1 855-71 186370, 1<br>1 855-71 186370, 1<br>1 855-71 186370, 1<br>1 855-71 186370, 1<br>1 855-71 185370, 1<br>1 855-71 185370, 1<br>1 855-71 185370, 1<br>1 855-71 185370, 1<br>1 855-71 185570, 1<br>1 855-71 185570, 1<br>1 855-71 185570, 1<br>1 855-71 185570, 1<br>1 955-71 185570, 1<br>1 955-71 195581, 1<br>1 955-71   | 944<br>940<br>1518<br>1666<br>954<br>300<br>546<br>801<br>1738<br>801<br>1506<br>225<br>225<br>864<br>450<br>002<br>225<br>864<br>450<br>002<br>1725<br>1008<br>1023<br>2258<br>2258<br>2258<br>2258<br>1674<br>-<br>1<br>1110<br>1025<br>1025<br>1025<br>1025<br>1025<br>1025<br>10  
  | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)  | 98385<br>97324<br>94257<br>97594<br>98738<br>997594<br>99759<br>992248<br>97739<br>99022<br>99403<br>99403<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>9207<br>9205<br>9205<br>9205<br>9205<br>9205<br>9205<br>9205<br>9205  | Na12-161         10006         10094           Na12-161         10006         10094           Na12-161         10105         1025           Na12-181         10105         1025           Na12-181         10105         1025           Na12-191         105566         10017           Na12-191         105566         10017           Na12-191         105566         10017           Na12-191         10556         10017           Na12-191         10016         10125           Na12-191         10156         10230           Na12-192         10161         10230           Na12-194         10156         10230           Na12-194         10156         10230           Na12-194         10156         10230           Na12-194         10156         10230           Na12-201         10407         10145           Na12-201         10407         10408           Na12-201         10408         10408           Na12-202         10408         20459           Na12-202         10408         20439           Na12-202         10408         20439           Na12-202   
   
  |
900<br>900<br>1518<br>1611<br>1518<br>801<br>1534<br>801<br>1536<br>801<br>1536<br>225<br>1536<br>1335<br>1255<br>1356<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1355<br>1357<br>1355<br>1357<br>1355<br>1357<br>1355<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357<br>1357         | (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)  | 98.228         No.           94.257         No.           94.257         No.           98.324         No.           98.324         No.           97.238         No.           97.238         No.           97.238         No.           97.238         No.           97.333         No.           99.248         No.           99.020         No.           99.002         No.           99.002         No.           99.003         No.           99.004         No.           99.005         No.           99.007         No.           99.007         No.           99.007         No.           90.007         No.           90.007         No.           90.007         No.           90.007         No.           91.003         No.           94.003         No.           95.014         No.           96.015         No.           96.558         No.           96.5572         No.           96.732         No.           96.732         No.     <   
   
   | bH1-186         [800           bH1-187         [810           bH1-187         [810           bH1-188         [826           bH1-198         [826           bH1-198         [826           bH1-191         [826           bH1-193         [876           bH1-191         [826           bH1-193         [876           bH1-194         [885           bH1-195         [904           bH1-196         [904           bH1-196         [904           bH1-196         [904           bH1-196         [904           bH1-196         [904           bH1-206         [907           bH1-206         [902           bH1-206         [2025           bH1-206         [2025           bH1-206         [2025           bH1-206         [2025           bH1-206         [2025           bH1-208         [206   
   
  | 171 [18970] 900. 900. 900. 900. 900. 900. 915575 [1518 015575 [1518 015575 [1518 015575 [1518 01557] 5154 641 [15175] 5154 641 [15175] 5154 641 [15175] 516 645 (151755] 516 (151755] 516 (151755) 516 (151755) 516 (151755) 516 (151755) 517 (1517555) 517 (151755) 517 (1517555) 517 (15   | (+)            
           | 98.128         9           94.257         8           94.257         8           98.11         8           98.21         8           98.21         8           98.21         8           98.21         8           98.21         8           99.21         8           99.224         9           99.023         9           99.024         9           99.025         9           99.026         9           96.937         9           96.932         9           96.932         9           96.933         9           96.933         9           96.932         9           96.933         9           97.13         8           96.737         9           96.937         9           96.937         9           96.937         9           96.937         9           96.937         9           96.937         9           99.944         9           99.944         9           99.944         9 <t< th=""><th>well-1:82         17256         1801           well-1:83         18323         1857           well-1:84         18234         1854           well-1:94         18374         1867           well-1:94         18374         1867           well-1:94         18478         1867           well-1:94         18468         1867           well-1:94         18468         1867           well-1:94         18468         1867           well-1:94         18468         1867           well-1:94         18667         1872           well-1:94         18706         1852           well-1:94         19724         1941           well-1:94         19724         1942           well-1:94         19724         1947           well-1:94         19726         1972           well-2:04         1989         1989           well-2:04         1989         2015           well-2:04</th><th><math display="block"> \begin{array}{cccccccccccccccccccccccccccccccccccc</math></th><th><math display="block">\begin{array}{c} +) &amp; -98.98 \\ +) &amp; -98.98 \\ +) &amp; -97.37 \\ +) &amp; -96.23 \\ +) &amp; -96.</math></th><th>55 Switz<br/>188 Switz<br/>199 Switz<br/>190 Switz<br/>1</th><th>140         1744           145         1744           148         1816           148         1818           149         1812           149         1812           149         1812           149         1812           141         1812           142         1819           143         1818           144         1872           143         1819           144         1872           145         1819           145         1819           145         1818           146         1819           147         1943           148         1941           149         1941           149         1941           149         1941           149         1941           149         1942           149         1943           149         1943           149         1943           149         1943           149         1943           149         1943           149         1943           149         1943     <th>2 18061<br/>9 181646<br/>10 183566<br/>10 183566<br/>10 183566<br/>10 184621<br/>10 184621<br/>10</th><th>900<br/>900<br/>1677<br/>954<br/>1677<br/>955<br/>801<br/>678<br/>1506<br/>225<br/>870<br/>1035<br/>450<br/>981<br/>1023<br/>1035<br/>450<br/>981<br/>1023<br/>1725<br/>1725<br/>1725<br/>1725<br/>1725<br/>1740<br/>999<br/>999</th><th>(+)         (+)           (+)         (+)</th><th>96.238<br/>97.317<br/>98.423<br/>94.256<br/>98.872<br/>98.8872<br/>94.055<br/>99.202<br/>94.03<br/>96.889<br/>97.202<br/>94.03<br/>96.638<br/>97.042<br/>98.616<br/>97.049<br/>96.539<br/>96.458<br/>97.548<br/>96.505<br/>96.457<br/>95.855<br/>95.8758<br/>95.8758<br/>95.8758<br/>95.855</th></th></t<>   
   | well-1:82         17256         1801           well-1:83         18323         1857           well-1:84         18234         1854           well-1:94         18374         1867           well-1:94         18374         1867           well-1:94         18478         1867           well-1:94         18468         1867           well-1:94         18468         1867           well-1:94         18468         1867           well-1:94         18468         1867           well-1:94         18667         1872           well-1:94         18706         1852           well-1:94         19724         1941           well-1:94         19724         1942           well-1:94         19724         1947           well-1:94         19726         1972           well-2:04         1989         1989           well-2:04         1989         2015           well-2:04  | $ \begin{array}{cccccccccccccccccccccccccccccccccccc$   | $\begin{array}{c} +) & -98.98 \\ +) & -98.98 \\ +) & -97.37 \\ +) & -96.23 \\ +) & -96.$  | 55 Switz<br>188 Switz<br>199 Switz<br>190 Switz<br>1  
  | 140         1744           145         1744           148         1816           148         1818           149         1812           149         1812           149         1812           149         1812           141         1812           142         1819           143         1818           144         1872           143         1819           144         1872           145         1819           145         1819           145         1818           146         1819           147         1943           148         1941           149         1941           149         1941           149         1941           149         1941           149         1942           149         1943           149         1943           149         1943           149         1943           149         1943           149         1943           149         1943           149         1943 <th>2 18061<br/>9 181646<br/>10 183566<br/>10 183566<br/>10 183566<br/>10 184621<br/>10 184621<br/>10</th> <th>900<br/>900<br/>1677<br/>954<br/>1677<br/>955<br/>801<br/>678<br/>1506<br/>225<br/>870<br/>1035<br/>450<br/>981<br/>1023<br/>1035<br/>450<br/>981<br/>1023<br/>1725<br/>1725<br/>1725<br/>1725<br/>1725<br/>1740<br/>999<br/>999</th> <th>(+)         (+)           (+)         (+)</th> <th>96.238<br/>97.317<br/>98.423<br/>94.256<br/>98.872<br/>98.8872<br/>94.055<br/>99.202<br/>94.03<br/>96.889<br/>97.202<br/>94.03<br/>96.638<br/>97.042<br/>98.616<br/>97.049<br/>96.539<br/>96.458<br/>97.548<br/>96.505<br/>96.457<br/>95.855<br/>95.8758<br/>95.8758<br/>95.8758<br/>95.855</th>  
  | 2 18061<br>9 181646<br>10 183566<br>10 183566<br>10 183566<br>10 184621<br>10   | 900<br>900<br>1677<br>954<br>1677<br>955<br>801<br>678<br>1506<br>225<br>870<br>1035<br>450<br>981<br>1023<br>1035<br>450<br>981<br>1023<br>1725<br>1725<br>1725<br>1725<br>1725<br>1740<br>999<br>999  | (+)         (+)             | 96.238<br>97.317<br>98.423<br>94.256<br>98.872<br>98.8872<br>94.055<br>99.202<br>94.03<br>96.889<br>97.202<br>94.03<br>96.638<br>97.042<br>98.616<br>97.049<br>96.539<br>96.458<br>97.548<br>96.505<br>96.457<br>95.855<br>95.8758<br>95.8758<br>95.8758<br>95.855   |
| Cample kinse (Cop-A5.8)<br>Schlar (Cop-B1R)<br>Schlar (Cop-B1R)<br>Schlar (Cop-B1R)<br>EBY type - In multiant (Cop-B1R)<br>EBY type - In multiant (Cop-B1R)<br>EBY type - In multiant (Cop-B1R)<br>Schlar HN-q receptor-like protein (Cop-B1R)<br>Schlar HN-q receptor-like protein (Cop-B1R)<br>EB-localical apposite regulator (Cop-B1R)<br>EB-localical apposite (Cop-B1R)<br>EB-localical protein (Cop-B1R)<br>I-1 bet inhibme (Cop-B1R)<br>EB-localical protein (Cop-C1A)<br>Bypadietical protein (Cop-C1A)<br>Sergin 1.2; (Cop-R21)<br>Bypadietical protein (Cop-C1A)<br>Maynin (Cop-C1A)  | A 57R<br>B1R<br>B2R<br>B4R<br>B5R<br>B5R<br>B5R<br>B5R<br>B7<br>B7<br>B7<br>B7<br>B7<br>B7<br>B7<br>B7<br>B7<br>B7   | CPXV195<br>CPXV196<br>CPXV197<br>CPXV197<br>CPXV197<br>CPXV197<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV21                      | NeF1-81-84<br>NoF1-81-84<br>NoF1-81-84<br>NoF1-81-84<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94<br>NoF1-91-94  | 1 788-67 1794-60<br>1 788-67 1794-60<br>1 887-67 185296,<br>1 887-67 185296,<br>1 884-69 185296,<br>1 884-69 185296,<br>1 884-69 185296,<br>1 884-69 185591,<br>1 887-91 185591,<br>1 887-71 185591,<br>1 887-71 185591,<br>1 887-67 185591,<br>1 897-61 189591,<br>1 997-61 1993-87,<br>1 997-61 1993-97,<br>1 997-61 1995-97,<br>1 997-61 1997-97,<br>1 997-61 1997-97,<br>1 997-97,<br>1 997-97,<br>1 99   | 594<br>990<br>990<br>1518<br>1686<br>954<br>300<br>546<br>801<br>300<br>225<br>864<br>801<br>556<br>225<br>25<br>864<br>450<br>978<br>1023<br>1725<br>2358<br>2358<br>1023<br>1725<br>5766<br>778<br>1029<br>1029<br>1029<br>1029<br>1029<br>1029<br>1029<br>1029   
  | (4)                             | 98385<br>97324<br>97324<br>97324<br>9739<br>97594<br>97594<br>97594<br>9759<br>99228<br>97733<br>99002<br>9403<br>99228<br>97333<br>99002<br>9423<br>99329<br>98258<br>97574<br>99329<br>96333<br>99329<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>97387<br>9739<br>9739  | 1200         1200         1200           1200         1200         1200           1201         12000         18005           1202         1200         18105           1202         1200         18504           1202         18504         18534           1202         18534         18554           1202         18756         18837           1202         19007         110           1202         19007         19230           1202         19007         19230           1202         19007         19510           1202         19007         19230           1202         19007         19107           1202         19007         19230           1202         19007         1910           1202         19007         1910           1202         19007         1910           1202         19007         1910           1202         19007         1910           1202         19007         1910           1202         19007         1910           1202         1910         1910           1202         1910  
   
  |
900<br>900<br>1518<br>1611<br>1518<br>954<br>534<br>954<br>1506<br>225<br>864<br>1025<br>1025<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>104<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>1035<br>10     | (+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)<br>(+)   | 98.228         No.           94.257         No.           94.257         No.           98.248         No.           98.248         No.           97.238         No.           97.238         No.           97.238         No.           97.238         No.           99.022         No.           99.025         No.           99.027         No.           99.028         No.           99.029         No.           99.020         No.           99.021         No.           99.022         No.           99.023         No.           97.031         No.           91.030         No.           95.041         No.           95.014         No.           95.014         No.           95.014         No.           95.014         No.           95.015         No.           94.455         No.           95.454         No.           96.477         No.           97.177         No.           97.177         No.   
   
   | bH1-186         [800           bH1-187         [810           bH1-188         [828           bH1-188         [828           bH1-190         [856           bH1-190         [856           bH1-191         [856           bH1-191         [856           bH1-191         [856           bH1-193         [876           bH1-194         [885           bH1-194         [885           bH1-194         [885           bH1-194         [885           bH1-194         [894           bH1-195         [904           bH1-196         [904           bH1-197         [913           bH1-204         [205           bH1-204         [206           bH1-204         [206 <th>11 [18970 900 900 900 900 900 900 915575 1518 4015557 5118 4015557 5118 4015557 5118 4015557 5118 4015557 5134 451 1080217 534 451 1080217 534 451 1080218 531 1055 380 115555 380 115555 380 115555 380 1155555 380 1155555 380 1155555 380 115555555 380 115555</th> <th>(+)           (+)</th> <th>98.128         9           94.271         8           94.271         8           98.71         8           98.71         8           98.71         8           98.71         8           97.28         8           97.28         8           97.28         9           99.02         2           99.02         9           99.03         9           99.043         9           99.052         9           99.063         2           97.033         2           97.035         2           97.036         2           97.037         2           98.824         2           94.835         2           95.958         2           95.958         2           96.732         2           96.732         2           96.732         2           96.732         2           96.732         2           96.732         2           96.732         2</th> <th>well-1:8:1         17256         1807           well-1:8:1         80201         1853           well-1:81         81201         1854           well-1:81         81274         1847           well-1:81         81374         1847           well-1:81         18540         1854           well-1:91         18540         1854           well-1:91         18540         1856           well-1:91         18507         1867           well-1:91         18507         1892           well-1:91         19502         1952           well-1:91         19502         1951           well-1:91         19526         1952           well-1:91         19526         1952           well-1:91         19526         1952           well-2:91         1952         1932           well-2:91         1952         1932           well-2:91         19632         1972       
   well-2:92         19729         1972           well-2:92         19729         1972           well-2:92         19729         1972           well-2:92         19729         1972           well-2:92</th> <th><math display="block"> \begin{array}{cccccccccccccccccccccccccccccccccccc</math></th> <th><math display="block">\begin{array}{c} (+) &amp; -98.98 \\ (+) &amp; -98.98 \\ (+) &amp; -96.23 \\ (+) &amp; -98.25 \\ (+) &amp; -99.20 \\</math></th> <th>55         Swell2           84         Swell2           88         Swell2           88         Swell2           88         Swell2           98         Swell2           91         Swell2           92         Swell2           93         Swell2           94         Swell2           94         Swell2           95         Swell2           96         Swell2           97         Swell2           98         Swell2           99         Swell2           90         Swell2           91         Swell2           92         Swell2           94         Swell2           94         Swell2           94         Swell2</th> <th>116         1744           1187         1744           1187         18012           1188         1818           1190         1812           1191         1812           1191         1812           1191         1812           1191         1812           1191         1812           1191         1812           1191         1812           1191         1812           1191         1812           1191         1812           1191         1912           1191         1913           1191         1912           1191         1913           1191         1912           1191         1912           1191         1912           1191         1912           1191         1912           1191         1912           1191         1912           1191         1912           1191         1912           1191         1912           1191         1912           1191         1912           1191         1912           1191<th>2   8006 <br/>9   81646   0183566<br/>0   818566   0183566<br/>0   818566   0183566<br/>0   85690   0183566<br/>0   86690   018356<br/>0   86690   018356<br/>0   85690   018356<br/>2   87400   018356<br/>3   90442<br/>2   99406<br/>1   99411<br/>2   99406<br/>1   99411<br/>2   99406<br/>1   99411<br/>2   99406<br/>2   99418<br/>2   99406<br/>2   99418<br/>2   99406<br/>2   99418<br/>2   99406<br/>2   99418<br/>2   99406<br/>2   99418<br/>2   99406<br/>2   99418<br/>2   9941</th><th>900<br/>900<br/>1518<br/>1677<br/>954<br/>1518<br/>1677<br/>954<br/>1518<br/>1677<br/>1505<br/>255<br/>870<br/>1035<br/>450<br/>981<br/>1023<br/>1725<br/>1098<br/>1023<br/>1725<br/>1098<br/>1023<br/>12403<br/>1674<br/>-<br/>1674<br/>-<br/>1674<br/>-<br/>1677<br/>1122<br/>582<br/>5775<br/>1770<br/>999<br/>4462<br/>2022<br/>132</th><th>(+)         (+)           (+)         (+)</th><th>96.238<br/>97.317<br/>93.296<br/>94.565<br/>94.565<br/>99.202<br/>94.585<br/>99.202<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.0</th></th>   | 11 [18970 900 900 900 900 900 900 915575 1518 4015557 5118 4015557 5118 4015557 5118 4015557 5118 4015557 5134 451 1080217 534 451 1080217
534 451 1080218 531 1055 380 115555 380 115555 380 115555 380 1155555 380 1155555 380 1155555 380 115555555 380 115555  | (+)            | 98.128         9           94.271         8           94.271         8           98.71         8           98.71         8           98.71         8           98.71         8           97.28         8           97.28         8           97.28         9           99.02         2           99.02         9           99.03         9           99.043         9           99.052         9           99.063         2           97.033         2           97.035         2           97.036         2           97.037         2           98.824         2           94.835         2           95.958         2           95.958         2           96.732         2           96.732         2           96.732         2           96.732         2           96.732         2           96.732         2           96.732         2   
   
   | well-1:8:1         17256         1807           well-1:8:1         80201         1853           well-1:81         81201         1854           well-1:81         81274         1847           well-1:81         81374         1847           well-1:81         18540         1854           well-1:91         18540         1854           well-1:91         18540         1856           well-1:91         18507         1867           well-1:91         18507         1892           well-1:91         19502         1952           well-1:91         19502         1951           well-1:91         19526         1952           well-1:91         19526         1952           well-1:91         19526         1952           well-2:91         1952         1932           well-2:91         1952         1932           well-2:91         19632         1972           well-2:92         19729         1972           well-2:92         19729         1972           well-2:92         19729         1972           well-2:92         19729         1972           well-2:92  | $ \begin{array}{cccccccccccccccccccccccccccccccccccc$   | $\begin{array}{c} (+) & -98.98 \\ (+) & -98.98 \\ (+) & -96.23 \\ (+) & -96.23 \\ (+) & -96.23 \\ (+) & -96.23 \\ (+) & -96.23 \\ (+) & -98.25 \\ (+) & -98.25 \\ (+) & -98.25 \\ (+) & -98.25 \\ (+) & -98.25 \\ (+) & -98.25 \\ (+) & -99.20 \\$   | 55         Swell2           84         Swell2           88         Swell2           88         Swell2           88         Swell2           98         Swell2           91         Swell2           92         Swell2           93         Swell2           94         Swell2           94         Swell2           95         Swell2           96         Swell2           97         Swell2           98         Swell2           99         Swell2           90         Swell2           91         Swell2           92         Swell2           94         Swell2           94         Swell2           94         Swell2   
  | 116         1744           1187         1744           1187         18012           1188         1818           1190         1812           1191         1812           1191         1812           1191         1812           1191         1812           1191         1812           1191         1812           1191         1812           1191         1812           1191         1812           1191         1812           1191         1912           1191         1913           1191         1912           1191         1913           1191         1912           1191         1912           1191         1912           1191         1912           1191         1912           1191         1912           1191         1912           1191         1912           1191         1912           1191         1912           1191         1912           1191         1912           1191         1912           1191 <th>2   8006 <br/>9   81646   0183566<br/>0   818566   0183566<br/>0   818566   0183566<br/>0   85690   0183566<br/>0   86690   018356<br/>0   86690   018356<br/>0   85690   018356<br/>2   87400   018356<br/>3   90442<br/>2   99406<br/>1   99411<br/>2   99406<br/>1   99411<br/>2   99406<br/>1   99411<br/>2   99406<br/>2   99418<br/>2   99406<br/>2   99418<br/>2   99406<br/>2   99418<br/>2   99406<br/>2   99418<br/>2   99406<br/>2   99418<br/>2   99406<br/>2   99418<br/>2   9941</th> <th>900<br/>900<br/>1518<br/>1677<br/>954<br/>1518<br/>1677<br/>954<br/>1518<br/>1677<br/>1505<br/>255<br/>870<br/>1035<br/>450<br/>981<br/>1023<br/>1725<br/>1098<br/>1023<br/>1725<br/>1098<br/>1023<br/>12403<br/>1674<br/>-<br/>1674<br/>-<br/>1674<br/>-<br/>1677<br/>1122<br/>582<br/>5775<br/>1770<br/>999<br/>4462<br/>2022<br/>132</th> <th>(+)         (+)           (+)         (+)</th>
<th>96.238<br/>97.317<br/>93.296<br/>94.565<br/>94.565<br/>99.202<br/>94.585<br/>99.202<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.03<br/>94.0</th>  | 2   8006 <br>9   81646   0183566<br>0   818566   0183566<br>0   818566   0183566<br>0   85690   0183566<br>0   86690   018356<br>0   86690   018356<br>0   85690   018356<br>2   87400   018356<br>3   90442<br>2   99406<br>1   99411<br>2   99406<br>1   99411<br>2   99406<br>1   99411<br>2   99406<br>2   99418<br>2   99406<br>2   99418<br>2   99406<br>2   99418<br>2   99406<br>2   99418<br>2   99406<br>2   99418<br>2   99406<br>2   99418<br>2   9941  | 900<br>900<br>1518<br>1677<br>954<br>1518<br>1677<br>954<br>1518<br>1677<br>1505<br>255<br>870<br>1035<br>450<br>981<br>1023<br>1725<br>1098<br>1023<br>1725<br>1098<br>1023<br>12403<br>1674<br>-<br>1674<br>-<br>1674<br>-<br>1677<br>1122<br>582<br>5775<br>1770<br>999<br>4462<br>2022<br>132   | (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)          
(+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)           (+)         (+)   | 96.238<br>97.317<br>93.296<br>94.565<br>94.565<br>99.202<br>94.585<br>99.202<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.03<br>94.0  |
| Cample kinss (Cop-A5.8)<br>Schlafer (Cop-B1R)<br>Schlafer (Cop-B1R)<br>Schlafer (Cop-B1R)<br>EX type-1 membran glycopotcin, protective an tigen (Cop-B3R)<br>Malyrini & protein (Cop-B4R)<br>Schlafe TNy ar creation (Cop-B4R)<br>Schlafe TNy ar creation (Cop-B4R)<br>Exch-Bies protein (Cop-B4R)<br>Exch-Bies protein (Cop-B4R)<br>Exch-Bies protein (Cop-B4R)<br>Script 1.2,3 (Cop-KL)<br>Bryotherical protein (Cop-B1R)<br>Script 1.2,3 (Cop-KL)<br>Bryotherical protein (Cop-B4R)<br>L-1 beta hindline (Cop-B4R)<br>IN-sliptable ta receptor glycopotcin (Cop-B4R)<br>IN-sliptable ta receptor (Cop-B4R)<br>IN-sliptable ta receptor glycopotcin (Cop-B4R)<br>IN-sliptable ta receptor (Cop-CL)<br>IN-stepia tcsCop-G4L)<br>IN-Stepia tcsCop-G4L)<br>IN-Stepia tcsCop-G4L<br>IN-Sciptar csciptor (COP-G4L)<br>IN-Sciptar (COP-G4L)<br>IN-Scip   | A 57R<br>B1R<br>B2R<br>B2R<br>B5R<br>B6R<br>B7R<br>B7R<br>B7R<br>B7R<br>B7R<br>B7R<br>B7R<br>B7  | CPXV195<br>CPXV196<br>CPXV197<br>CPXV197<br>CPXV197<br>CPXV197<br>CPXV201<br>CPXV201<br>CPXV201<br>CPXV201<br>CPXV203<br>CPXV204<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV207<br>CPXV205<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV20                      | NeF1:18.20<br>NeF1:18.20<br>NeF1:18.20<br>NeF1:18.20<br>NeF1:19.20<br>NeF1:19.20<br>NeF1:19.20<br>NeF1:19.20<br>NeF1:19.20<br>NeF1:19.20<br>NeF1:19.20<br>NeF1:19.20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NeF1:20<br>NEF1:20<br>NEF1:20<br>NEF1:20<br>NEF1:20<br>NEF1:20<br>NEF1:20<br>NEF1:20<br>NEF1:20<br>NEF1:20<br>NE             | 1 788-07 1794-00<br>1 805-07 182206<br>1 805-07 182206<br>1 805-07 182206<br>1 805-07 182206<br>1 805-07 182206<br>1 805-07 182206<br>1 805-07 185-07<br>1 905-07<br>1 905-0           |
944<br>960<br>950<br>954<br>954<br>954<br>954<br>954<br>954<br>954<br>865<br>865<br>1005<br>225<br>546<br>861<br>1005<br>8854<br>1005<br>8854<br>1005<br>8854<br>1005<br>8854<br>1005<br>1058<br>1059<br>1059<br>1058<br>809<br>1058<br>809<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>800<br>1058<br>1056<br>1056<br>1055<br>1056<br>1055<br>1056<br>1055<br>1056<br>1055<br>1056<br>1055<br>1057<br>1058<br>1058<br>1058<br>1059<br>1058<br>1059<br>1058<br>1058<br>1059<br>1058<br>1059<br>1058<br>1059<br>1058<br>1058<br>1058<br>1058<br>1059<br>1058<br>1059<br>1058<br>1058<br>1058<br>1058<br>1058<br>1058<br>1058<br>1058 | (4)             | 983883<br>97324<br>94257<br>97354<br>98738<br>97739<br>990248<br>97739<br>990248<br>97739<br>99022<br>97033<br>99002<br>99403<br>99403<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99329<br>99359<br>99339<br>99359<br>99339<br>99359<br>99339<br>99359<br>99339<br>99359<br>99339<br>99359<br>99339<br>99359<br>99339<br>99359<br>99339<br>99359<br>99359<br>99359<br>99359<br>99359<br>99359<br>99359<br>99359<br>99359<br>99359<br>99359<br>99539<br>99539<br>99539<br>99539<br>99539<br>99539<br>99539<br>99539<br>99539<br>99539<br>99539<br>99539<br>995739<br>995731<br>995732  | Na12-161         10006         10094           Na12-161         81005         10094           Na12-161         81005         10054           Na12-161         81005         10054           Na12-161         81005         10054           Na12-101         85566         10017           Na12-102         81056         10017           Na12-103         81056         10017           Na12-104         81056         10017           Na12-105         91016         10013           Na12-104         91016         10013           Na12-104         91015         10220           Na12-104         91015         10230           Na12-104         91015         10230           Na12-200         90005         19408           Na12-201         90005         19408           Na12-201         90045         19408           Na12-201         90045         19408           Na12-201         90045         10014           Na12-201         10045         1014           Na12-202         10045         1014           Na12-202         10045         1014           Na12-202 <t< th=""><th>900<br/>900<br/>1518<br/>1611<br/>954<br/>534<br/>801<br/>1306<br/>225<br/>1306<br/>225<br/>225<br/>1306<br/>225<br/>1306<br/>1305<br/>225<br/>1305<br/>225<br/>1305<br/>1305<br/>1305<br/>1305<br/>1305<br/>1305<br/>1305<br/>130</th><th>(i)         (ii)           (ii)         (iii)           (iii)         (iii)</th><th>98.252         No.           94.257         No.           98.324         No.           98.338         No.           97.238         No.           97.238         No.           97.238         No.           97.238         No.           97.238         No.           99.248         No.           99.248         No.           99.021         No.           99.002         No.           99.002         No.           99.003         No.           99.004         No.           99.005         No.           99.007         No.           99.008         No.           99.009         No.           90.007         No.           99.007         No.           99.007         No.           99.007         No.           91.003         No.           94.005         No.           91.003         No.           95.55         No.           96.572         No.           96.555         No.           96.722         No.      97.17         No.      9</th><th>bill         180           bill         180           bill         18           bill         19           bill         18           bill         19           bill         10           bill         10           bill         10           bill         10           bill         10           bill<th>171 [18970] 900. 900. 900. 900. 900. 900. 901. 905575 [151 8015575 [151 80555 [151 80555 [151 80555 [151 80555 [151 80565] 516 8055 [151 80565] 516 8055 [151 80565] 516 8055 [151 80565] 516 8055 [151 80565] 516 8055 [151 80565] 516 8055 [151 8056] 516 8055 [151 8056] 517 80550 [151 8056] 517 80550 [151 8056] 517 80550 [151</th><th>(+)           (+)         
 (+)           (+)           (+)           (+)           (+)           (+)           (+)           (+)           (+)           (+)           (+)           (+)           (+)           (+)           (+)</th><th>98.238         9           94.257         8           94.257         8           98.734         9           98.734         9           98.734         9           97.28         9           97.28         9           99.248         9           99.248         9           94.03         9           94.03         9           96.933         9           96.933         9           96.933         9           91.903         9           96.933         9           96.933         9           96.933         9           96.933         9           96.934         9           96.935         9           96.936         9           96.937         9           96.938         9           99.844         9           99.844         9           99.844         9           99.844         9           99.844         9           99.844         9           99.844         9           99.844         9</th><th>well-1:82         179268         1801           well-1:81         80234         1857           well-1:81         80234         1857           well-1:94         8374         1867           well-1:94         1874         1867           well-1:94         1847         1867           well-1:94         1847         1867           well-1:94         1847         18666           well-1:94         1847         1867           well-1:94         1847         1867           well-1:94         1847         1867           well-1:94         1870         1852           well-1:94         1972         1972           well-1:94         1973         1972           well-1:94         1974         1971           well-1:94         1974         1971           well-1:94         1974         1971           well-1:94         1974         1971           well-1:94         1974</th><th><math display="block"> \begin{array}{cccccccccccccccccccccccccccccccccccc</math></th><th><math display="block">\begin{array}{c} (+) &amp; - &amp; 88.98 \\ (+) &amp; - &amp; 98.98 \\ (+) &amp;</math></th><th>Swell         Swell           81         Swell         Swell           88         Swell         Swell           72         Swell         Swell           72         Swell         Swell           73         Swell         Swell           74         Swell         Swell           75         Swell         Swell           71         Swell         Swell           73         Swell         Swell           74         Swell         Swell           75         Swell         Swell           76         Swell         Swell           76         Swell         Swell           75         Swell         Swell           76         Swell         Swell           76         Swell         Swell           77         Swell         Swell           78         Swell         Swell           79         Swell         Swell           717</th><th>136         1744           136         1746           148         1818           148         1819           149         1837           149         1837           149         1837           149         1870           149         1870           149         1870           149         1870           149         1879           149         1879           149         1879           149         1879           149         1879           149         1879           149         1879           149         1879           149         1971           149         1943           149         1943           149         1943           149         1943           149         1943           149         1943           149         1943           149         1943           149         1944           149         1972           149         1974           149         1974           149         1974     <th>2 180061<br/>9 181646 (183566<br/>0 183566 (183566<br/>0 183566 (183566<br/>0 185566 (183566<br/>0 185666 (183566<br/>0 186676 (183676<br/>0 186676<br/>0 186676<br/>0 18677<br/>0 19311<br/>0 193111<br/>0 19311<br/>0 193110<br/>0 19311000000000000000000000000000000000</th><th>900<br/>1518<br/>1677<br/>954<br/>1677<br/>1555<br/>801<br/>678<br/>1506<br/>678<br/>1506<br/>678<br/>1506<br/>678<br/>1506<br/>678<br/>1506<br/>978<br/>1005<br/>970<br/>1005<br/>970<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005</th><th>(+)         (+)           (+)        
(+)</th><th>96.238<br/>97.317<br/>97.329<br/>94.23<br/>94.23<br/>94.565<br/>94.565<br/>94.565<br/>97.846<br/>97.092<br/>97.093<br/>98.8616<br/>97.093<br/>98.8235<br/>97.999<br/>94.809<br/>94.809<br/>94.809<br/>94.805<br/>97.846<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>9.572<br/>9.572<br/>9.572<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.5</th></th></th></t<> | 900<br>900<br>1518<br>1611<br>954<br>534<br>801<br>1306<br>225<br>1306<br>225<br>225<br>1306<br>225<br>1306<br>1305<br>225<br>1305<br>225<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>130   | (i)         (ii)           (ii)         (iii)           (iii)         (iii)  | 98.252         No.           94.257         No.           98.324         No.           98.338         No.           97.238         No.           97.238         No.           97.238         No.           97.238         No.           97.238         No.           99.248         No.           99.248         No.           99.021         No.           99.002         No.           99.002         No.           99.003         No.           99.004         No.           99.005         No.           99.007         No.           99.008         No.           99.009         No.           90.007         No.           99.007         No.           99.007         No.           99.007         No.           91.003         No.           94.005         No.           91.003         No.           95.55         No.           96.572         No.           96.555         No.           96.722         No.      97.17         No.      9   
   
  | bill         180           bill         180           bill         18           bill         19           bill         18           bill         19           bill         10           bill         10           bill         10           bill         10           bill         10           bill <th>171 [18970] 900. 900. 900. 900. 900. 900. 901. 905575 [151 8015575 [151 80555 [151 80555 [151 80555 [151 80555 [151 80565] 516 8055 [151 80565] 516 8055 [151 80565] 516 8055 [151 80565] 516 8055 [151 80565] 516 8055 [151 80565] 516 8055 [151 8056] 516 8055 [151 8056] 517 8055 [151 8056]
517 80550 [151 8056] 517 80550 [151 8056] 517 80550 [151</th> <th>(+)           (+)</th> <th>98.238         9           94.257         8           94.257         8           98.734         9           98.734         9           98.734         9           97.28         9           97.28         9           99.248         9           99.248         9           94.03         9           94.03         9           96.933         9           96.933         9           96.933         9           91.903         9           96.933         9           96.933         9           96.933         9           96.933         9           96.934         9           96.935         9           96.936         9           96.937         9           96.938         9           99.844         9           99.844         9           99.844         9           99.844         9           99.844         9           99.844         9           99.844         9           99.844         9</th> <th>well-1:82         179268         1801           well-1:81         80234         1857           well-1:81         80234         1857           well-1:94         8374         1867           well-1:94         1874         1867           well-1:94         1847         1867           well-1:94         1847         1867           well-1:94         1847         18666           well-1:94         1847         1867           well-1:94         1847         1867           well-1:94         1847         1867           well-1:94         1870         1852           well-1:94         1972         1972           well-1:94         1973         1972           well-1:94         1974         1971           well-1:94         1974         1971           well-1:94         1974         1971           well-1:94         1974         1971           well-1:94         1974</th> <th><math display="block"> \begin{array}{cccccccccccccccccccccccccccccccccccc</math></th> <th><math display="block">\begin{array}{c} (+) &amp; - &amp; 88.98 \\ (+) &amp; - &amp; 98.98 \\ (+) &amp;</math></th> <th>Swell         Swell           81         Swell         Swell           88         Swell         Swell           72         Swell         Swell           72         Swell         Swell           73         Swell         Swell           74         Swell         Swell           75         Swell         Swell           71         Swell         Swell           73         Swell         Swell           74         Swell         Swell           75         Swell         Swell           76         Swell         Swell           76         Swell         Swell           75         Swell         Swell           76         Swell         Swell           76         Swell         Swell           77         Swell         Swell           78         Swell         Swell           79         Swell         Swell           717</th> <th>136         1744           136         1746           148         1818           148         1819           149         1837           149         1837           149         1837           149         1870           149         1870           149         1870           149         1870           149         1879           149         1879           149         1879           149         1879           149         1879           149         1879           149         1879           149         1879           149         1971           149         1943           149         1943           149         1943           149         1943           149         1943           149         1943           149         1943           149         1943           149         1944           149         1972           149         1974           149         1974           149         1974     <th>2 180061<br/>9 181646 (183566<br/>0 183566 (183566<br/>0 183566 (183566<br/>0 185566 (183566<br/>0 185666 (183566<br/>0 186676 (183676<br/>0 186676<br/>0 186676<br/>0 18677<br/>0 19311<br/>0 193111<br/>0 19311<br/>0 193110<br/>0 19311000000000000000000000000000000000</th><th>900<br/>1518<br/>1677<br/>954<br/>1677<br/>1555<br/>801<br/>678<br/>1506<br/>678<br/>1506<br/>678<br/>1506<br/>678<br/>1506<br/>678<br/>1506<br/>978<br/>1005<br/>970<br/>1005<br/>970<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005</th><th>(+)         (+)           (+)        
(+)</th><th>96.238<br/>97.317<br/>97.329<br/>94.23<br/>94.23<br/>94.565<br/>94.565<br/>94.565<br/>97.846<br/>97.092<br/>97.093<br/>98.8616<br/>97.093<br/>98.8235<br/>97.999<br/>94.809<br/>94.809<br/>94.809<br/>94.805<br/>97.846<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>9.572<br/>9.572<br/>9.572<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.5</th></th> | 171 [18970] 900. 900. 900. 900. 900. 900. 901. 905575 [151 8015575 [151 80555 [151 80555 [151 80555 [151 80555 [151 80565] 516 8055 [151 80565] 516 8055 [151 80565] 516 8055 [151 80565] 516 8055 [151 80565] 516 8055 [151 80565] 516 8055 [151 8056] 516 8055 [151 8056] 517 80550 [151 8056] 517 80550 [151 8056] 517 80550 [151  | (+)            | 98.238         9           94.257         8           94.257         8           98.734         9           98.734         9           98.734         9           97.28         9           97.28         9           99.248         9           99.248         9           94.03         9           94.03         9           96.933         9           96.933         9           96.933         9           91.903         9           96.933         9           96.933         9           96.933         9           96.933         9           96.934         9           96.935         9           96.936         9           96.937         9           96.938         9           99.844         9           99.844         9           99.844         9           99.844         9           99.844         9           99.844         9           99.844         9           99.844         9   
   
   | well-1:82         179268         1801           well-1:81         80234         1857           well-1:81         80234         1857           well-1:94         8374         1867           well-1:94         1874         1867           well-1:94         1847         1867           well-1:94         1847         1867           well-1:94         1847         18666           well-1:94         1847         1867           well-1:94         1847         1867           well-1:94         1847         1867           well-1:94         1870         1852           well-1:94         1972         1972           well-1:94         1973         1972           well-1:94         1974         1971           well-1:94         1974         1971           well-1:94         1974         1971           well-1:94         1974         1971           well-1:94         1974  | $ \begin{array}{cccccccccccccccccccccccccccccccccccc$   | $\begin{array}{c} (+) & - & 88.98 \\ (+) & - & 88.98 \\ (+) & - & 88.98 \\ (+) & - & 88.98 \\ (+) & - & 88.98 \\ (+) & - & 88.98 \\ (+) & - & 88.98 \\ (+) & - & 98.98 \\ (+) & - & 98.98 \\ (+) & - & 98.98 \\ (+) & - & 98.98 \\ (+) & - & 98.98 \\ (+) & - & 98.98 \\ (+) & - & 98.98 \\ (+) & - & 98.98 \\ (+) & - & 98.98 \\ (+) & - & 98.98 \\ (+) & - & 98.98 \\ (+) & - &
98.98 \\ (+) & - & 98.98 \\ (+) &$  | Swell         Swell           81         Swell         Swell           88         Swell         Swell           72         Swell         Swell           72         Swell         Swell           73         Swell         Swell           74         Swell         Swell           75         Swell         Swell           71         Swell         Swell           73         Swell         Swell           74         Swell         Swell           75         Swell         Swell           76         Swell         Swell           76         Swell         Swell           75         Swell         Swell           76         Swell         Swell           76         Swell         Swell           77         Swell         Swell           78         Swell         Swell           79         Swell         Swell           717  
  | 136         1744           136         1746           148         1818           148         1819           149         1837           149         1837           149         1837           149         1870           149         1870           149         1870           149         1870           149         1879           149         1879           149         1879           149         1879           149         1879           149         1879           149         1879           149         1879           149         1971           149         1943           149         1943           149         1943           149         1943           149         1943           149         1943           149         1943           149         1943           149         1944           149         1972           149         1974           149         1974           149         1974 <th>2 180061<br/>9 181646 (183566<br/>0 183566 (183566<br/>0 183566 (183566<br/>0 185566 (183566<br/>0 185666 (183566<br/>0 186676 (183676<br/>0 186676<br/>0 186676<br/>0 18677<br/>0 19311<br/>0 193111<br/>0 19311<br/>0 193110<br/>0 19311000000000000000000000000000000000</th> <th>900<br/>1518<br/>1677<br/>954<br/>1677<br/>1555<br/>801<br/>678<br/>1506<br/>678<br/>1506<br/>678<br/>1506<br/>678<br/>1506<br/>678<br/>1506<br/>978<br/>1005<br/>970<br/>1005<br/>970<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>971<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005<br/>1005</th> <th>(+)         (+)           (+)         (+)</th> <th>96.238<br/>97.317<br/>97.329<br/>94.23<br/>94.23<br/>94.565<br/>94.565<br/>94.565<br/>97.846<br/>97.092<br/>97.093<br/>98.8616<br/>97.093<br/>98.8235<br/>97.999<br/>94.809<br/>94.809<br/>94.809<br/>94.805<br/>97.846<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>-<br/>97.346<br/>-<br/>9.572<br/>9.572<br/>9.572<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.575<br/>9.5</th> | 2 180061<br>9 181646 (183566<br>0 183566 (183566<br>0 183566 (183566<br>0 185566 (183566<br>0 185666 (183566<br>0 186676 (183676<br>0 186676<br>0 186676<br>0 18677<br>0 19311<br>0 193111<br>0 19311<br>0 193110<br>0 19311000000000000000000000000000000000  
   | 900<br>1518<br>1677<br>954<br>1677<br>1555<br>801<br>678<br>1506<br>678<br>1506<br>678<br>1506<br>678<br>1506<br>678<br>1506<br>978<br>1005<br>970<br>1005<br>970<br>1005<br>971<br>1005<br>971<br>1005<br>971<br>1005<br>971<br>1005<br>971<br>1005<br>971<br>1005<br>971<br>1005<br>971<br>1005<br>971<br>1005<br>971<br>1005<br>971<br>1005<br>971<br>1005<br>971<br>1005<br>971<br>1005<br>971<br>1005<br>971<br>1005<br>971<br>1005<br>971<br>1005<br>971<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005<br>1005  | (+)         (+)             | 96.238<br>97.317<br>97.329<br>94.23<br>94.23<br>94.565<br>94.565<br>94.565<br>97.846<br>97.092<br>97.093<br>98.8616<br>97.093<br>98.8235<br>97.999<br>94.809<br>94.809<br>94.809<br>94.805<br>97.846<br>-<br>-<br>97.346<br>-<br>-<br>97.346<br>-<br>-<br>97.346<br>-<br>-<br>97.346<br>-<br>-<br>97.346<br>-<br>-<br>97.346<br>-<br>-<br>97.346<br>-<br>-<br>97.346<br>-<br>-<br>97.346<br>-<br>-<br>97.346<br>-<br>-<br>97.346<br>-<br>-<br>97.346<br>-<br>-<br>97.346<br>-<br>-<br>97.346<br>-<br>-<br>97.346<br>-<br>-<br>97.346<br>-<br>-<br>97.346<br>-<br>-<br>97.346<br>-<br>-<br>97.346<br>-<br>9.572<br>9.572<br>9.572<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.575<br>9.5 |
| Cample kinse (Cop-A5.8)<br>Schlart (Cop-B1R)<br>Schlart (Cop-B1R)<br>Schlart (Cop-B1R)<br>EFV type -1 menhane glycopotelia protective an tigen (Cop-B5R)<br>Malyrin (Cop-B4R)<br>EFV type -1 menhane glycopotelia protective an tigen (Cop-B5R)<br>Malyrin Kinse (Cop-B4R)<br>Schlart EFV er receptor like protein (Cop-B5R)<br>EFV type -1 menhane glycopotelia (Cop-B5R)<br>EFV type -1 menhane (Cop-B1R)<br>EFV type -1 menhane (Cop-C1R)<br>EFV type -1 menhane (Co   | A 57R<br>B1R<br>B2R<br>B4R<br>B5R<br>B5R<br>B5R<br>B7R<br>B7R<br>B7R<br>B7R<br>B1R<br>B1R<br>B1R<br>B1R<br>B1R<br>B1R<br>B1R<br>B1   | CPXV195<br>CPXV196<br>CPXV197<br>CPXV197<br>CPXV197<br>CPXV197<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV217<br>CPXV21                      | NoF1-18.<br>NoF1-18.<br>NoF1-18.<br>NoF1-18.<br>NoF1-19.<br>NoF1-19.<br>NoF1-19.<br>NoF1-19.<br>NoF1-19.<br>NoF1-19.<br>NoF1-19.<br>NoF1-19.<br>NoF1-19.<br>NoF1-19.<br>NoF1-19.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF1-20.<br>NoF   | 1 788-67 1794-60<br>1 788-67 1794-60<br>1 887-67 185296,<br>1 887-67 185296,<br>1 884-69 185296,<br>1 884-69 185296,<br>1 884-69 185296,<br>1 884-69 185591,<br>1 885-74 18639,<br>1 895-84,<br>1 997-14 193-85,<br>1 997-14 193-95,<br>1 997-14 193-14,<br>1 997-14,<br>1 997-14,  | 594<br>900<br>1518<br>954<br>954<br>954<br>954<br>954<br>954<br>801<br>1505<br>225<br>854<br>801<br>1505<br>225<br>884<br>1505<br>884<br>1003<br>21725<br>1008<br>884<br>1002<br>21725<br>2258<br>884<br>1002<br>1072<br>1072<br>999<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-  
   | (i)<br>(i)<br>(i)<br>(i)<br>(i)<br>(i)<br>(i)<br>(i)<br>(i)<br>(i)  | 983853<br>973524<br>94257<br>97594<br>987384<br>100<br>97179<br>99228<br>97333<br>99.002<br>94.03<br>99.002<br>94.03<br>99.6933<br>99.6933<br>99.6933<br>99.6933<br>92.077<br>89.255<br>97.5846<br>-<br>96.573<br>96.573<br>96.573<br>96.573<br>96.573<br>96.573<br>96.573<br>96.573<br>96.573<br>96.573<br>96.573<br>96.573<br>96.573<br>96.573<br>96.573<br>96.573<br>96.573<br>96.573<br>96.573<br>96.573<br>96.573<br>96.573<br>96.573<br>96.573<br>96.573<br>96.573<br>96.573<br>96.573<br>96.573<br>96.573<br>96.573<br>96.573<br>96.573<br>96.573<br>96.573<br>96.573<br>96.573<br>96.573<br>96.573<br>96.573<br>96.573<br>97.584<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594<br>97.594  | Mar 2: 167         10006         10099           Mar 2: 168         10006         10099           Mar 2: 168         10105         1025           Mar 2: 109         10506         10099           Mar 2: 109         10556         1007           Mar 2: 109         10566         1007           Mar 2: 109         10566         1007           Mar 2: 109         10566         10037           Mar 2: 109         10016         10033           Mar 2: 109         10016         10033           Mar 2: 109         10016         10033           Mar 2: 109         10016         10133           Mar 2: 109         10037         119           Mar 2: 201         10037         119           Mar 2: 201         10037         119           Mar 2: 201         10054         10045           Mar 2: 201         10054         10045           Mar 2: 201         10046         10045           Mar 2: 201         10466         10045           Mar 2: 201         10466         10475           Mar 2: 201         10466         10475           Mar 2: 201         10478         11437   
   
   |
900<br>900<br>1518<br>1611<br>1518<br>954<br>534<br>954<br>1536<br>801<br>1506<br>225<br>854<br>1025<br>1506<br>1025<br>1506<br>1025<br>1078<br>1023<br>1725<br>1098<br>2382<br>1674<br>-<br>1725<br>1098<br>1725<br>1098<br>2382<br>1674<br>-<br>1725<br>1998<br>2382<br>1775<br>1998<br>2382<br>1775<br>1998<br>1997<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1998<br>1997<br>1998<br>1998<br>1998<br>1998<br>1998<br>1999<br>1997<br>1998<br>1998<br>1998<br>1998<br>1998<br>1999<br>1997<br>1998<br>1999<br>1997<br>1998<br>1998<br>1998<br>1999<br>1997<br>1998<br>1998<br>1997<br>1998<br>1998<br>1997<br>1998<br>1997<br>1998<br>1998<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>1997<br>19   | (i)         (ii)           (iii)         (iii)           (iii)         (iiii)           (iii)         (iii)  | 98.228         No.           94.257         No.           94.257         No.           98.244         No.           98.242         No.           98.242         No.           97.238         No.           99.248         No.           99.025         No.           99.027         No.           99.028         No.           99.029         No.           99.029         No.           99.020         No.           99.021         No.           99.022         No.           99.023         No.           91.031         No.           96.329         No.           91.303         No.           95.314         No.           95.314         No.           95.315         No.           95.327         No.           95.338         No.           95.341         No.           95.358         No.           95.358         No.           95.358         No.           95.358         No.           95.371         No.           96.472         No. </th <th>Hell 1:18         RUB           Hell 1:18         RUB           Hell 1:19         SA           Hell 1:10         SA     <!--</th--><th>11 [18970] 900 900 900 900 900 901 915575 1518 4015557 5118 4015557 5118 4015575 5118 4015575 5118 401557 5134 45186217 534 45186217 534 45186217 534 45186175 534 53187635 801 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 5197605 1505 519760 1505 519760 1505 519760 1505 519760 1505 519760 1505 519760 1505 519760 1505 519760 1505 519760 1505 519760 1505 519760 1505 519760 1505 51976 51976 5</th><th><math display="block">\begin{array}{c} (+) \\ (+)
\\ (+) \\ (+) \\ (+) \\ (+) \\ (+) \\ (+) \\</math></th><th>98.238         9           94.251         1           94.251         1           94.251         1           94.251         1           98.734         1           98.734         1           97.238         2           97.238         2           97.238         2           99.002         2           99.003         2           99.005         2           99.005         2           99.005         2           99.005         2           99.005         2           99.005         2           99.005         2           99.005         2           99.007         2           99.007         2           99.007         2           99.008         2           99.007         2           99.008         2           99.008         2           99.008         2           99.011         2           99.023         2           99.033         2           99.047         2      99.058         2      <tr td=""></tr></th><th>well-1:8:1         17256         1807           well-1:8:1         18030-1         1837           well-1:8:1         1837-0         1847           well-1:8:1         1837-0         1847           well-1:9:1         18430         1835           well-1:9:1         19450         1915           well-1:9:1         19251         1932           well-1:9:1         1924         1941           well-2:0:1         1947         1967           well-2:0:1         1947         1967           well-2:0:1         1952         1932           well-2:0:1         1947         1967           well-2:0:1         1947         1967           well-2:0:1         19520         1933           w</th><th><math display="block"> \begin{array}{cccccccccccccccccccccccccccccccccccc</math></th><th><math display="block">\begin{array}{c} (+) &amp; -98.98 + 0.00 \\ (+) &amp; -78.378 + </math></th><th>55         Swell-2           84         Swell-2           88         Swell-2           88         Swell-2           88         Swell-2           88         Swell-2           88         Swell-2           91         Swell-2           92         Swell-4           94         Swell-2           94         Swell-4           94         Swell-2           95         Swell-2           96         Swell-4           97         Swell-2     <!--</th--><th>140         1744           140         1744           141         1818           143         1818           143         1818           143         1818           144         1818           145         1812           143         1818           143         1818           143         1817           143         1817           143         1817           143         1817           144         1817           145         1818           145         1818           145         1818           145         1818           146         1874           147         1944           147         1944           148         197           149         1915           149         1912           149         1912           149         1912           149         1912           141         1414           141         1414           141         1414</th><th>2 180661<br/>9 181646<br/>0 183566<br/>0 183566<br/>0 183566<br/>0 183566<br/>0 183566<br/>0 183566<br/>0 186690<br/>0 185926<br/>1 18748<br/>0 186690<br/>0 185920<br/>1 18749<br/>1 18748<br/>1 189338<br/>1 199406<br/>1 19940<br/>1 199406<br/>1 19940</th><th>900 1518 1677 954 1577 555 557 555 800 678 800 678 800 1506 450 981 1674 2403 1725 582 5775 5775 582 5775 582 5775 582 1740 969 442 2402 174 174 265 445 1757 1740 174 174 174 174 174 174 174 174 174 174</th><th>(+)         (+)           (+)         (+)</th><th>96.238<br/>97.317<br/>97.326<br/>94.423<br/>94.426<br/>94.565<br/>94.565<br/>94.565<br/>94.565<br/>94.616<br/>97.093<br/>96.02<br/>97.846<br/>95.399<br/>96.02<br/>97.846<br/>96.505<br/>96.5173<br/>96.409<br/>97.846<br/>97.386<br/>96.505<br/>97.386<br/>96.505<br/>97.386<br/>96.505<br/>97.386<br/>96.505<br/>97.386<br/>96.505<br/>97.386<br/>96.505<br/>97.386<br/>96.505<br/>97.386<br/>96.505<br/>97.386<br/>96.505<br/>97.386<br/>96.505<br/>97.386<br/>96.505<br/>97.386<br/>96.505<br/>97.386<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.596<br/>97.596<br/>97.596<br/>97.596<br/>97.596<br/>97.596<br/>97.596<br/>97.596<br/>97.596<br/>97.</th></th></th> | Hell 1:18         RUB           Hell 1:18         RUB           Hell 1:19         SA           Hell 1:10         SA </th <th>11 [18970] 900 900 900 900 900 901 915575 1518 4015557 5118 4015557 5118 4015575 5118 4015575 5118 401557 5134 45186217 534 45186217 534 45186217 534 45186175 534 53187635 801 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 5197605 1505 519760 1505 519760 1505 519760 1505 519760 1505 519760 1505 519760 1505 519760 1505 519760 1505 519760 1505 519760 1505 519760 1505 519760 1505 51976 51976 5</th> <th><math display="block">\begin{array}{c} (+) \\
(+) \\ (+) \\</math></th> <th>98.238         9           94.251         1           94.251         1           94.251         1           94.251         1           98.734         1           98.734         1           97.238         2           97.238         2           97.238         2           99.002         2           99.003         2           99.005         2           99.005         2           99.005         2           99.005         2           99.005         2           99.005         2           99.005         2           99.005         2           99.007         2           99.007         2           99.007         2           99.008         2           99.007         2           99.008         2           99.008         2           99.008         2           99.011         2           99.023         2           99.033         2           99.047         2      99.058         2      <tr td=""></tr></th> <th>well-1:8:1         17256         1807           well-1:8:1         18030-1         1837           well-1:8:1         1837-0         1847           well-1:8:1         1837-0         1847           well-1:9:1         18430         1835           well-1:9:1         19450         1915           well-1:9:1         19251         1932           well-1:9:1         1924         1941           well-2:0:1         1947         1967           well-2:0:1         1947         1967           well-2:0:1         1952         1932           well-2:0:1         1947         1967           well-2:0:1         1947         1967           well-2:0:1         19520         1933           w</th> <th><math display="block"> \begin{array}{cccccccccccccccccccccccccccccccccccc</math></th> <th><math display="block">\begin{array}{c} (+) &amp; -98.98 + 0.00 \\ (+) &amp; -78.378 + </math></th> <th>55         Swell-2           84         Swell-2           88         Swell-2           88         Swell-2           88         Swell-2           88         Swell-2           88         Swell-2           91         Swell-2           92         Swell-4           94         Swell-2           94         Swell-4           94         Swell-2           95         Swell-2           96         Swell-4           97         Swell-2     <!--</th--><th>140         1744           140         1744           141         1818           143         1818           143         1818           143         1818           144         1818           145         1812           143         1818           143         1818           143         1817           143         1817           143         1817           143         1817           144         1817           145         1818           145         1818           145         1818           145         1818           146         1874           147         1944           147         1944           148         197           149         1915           149         1912           149         1912           149         1912           149         1912           141         1414           141         1414           141         1414</th><th>2 180661<br/>9 181646<br/>0 183566<br/>0 183566<br/>0 183566<br/>0 183566<br/>0 183566<br/>0 183566<br/>0 186690<br/>0 185926<br/>1 18748<br/>0 186690<br/>0 185920<br/>1 18749<br/>1 18748<br/>1 189338<br/>1 199406<br/>1 19940<br/>1 199406<br/>1 19940</th><th>900 1518 1677 954 1577 555 557 555 800 678 800 678 800 1506 450 981 1674 2403 1725 582 5775 5775 582 5775 582 5775 582 1740 969 442 2402 174 174 265 445 1757 1740 174 174 174 174 174 174 174 174 174 174</th><th>(+)         (+)           (+)         (+)</th><th>96.238<br/>97.317<br/>97.326<br/>94.423<br/>94.426<br/>94.565<br/>94.565<br/>94.565<br/>94.565<br/>94.616<br/>97.093<br/>96.02<br/>97.846<br/>95.399<br/>96.02<br/>97.846<br/>96.505<br/>96.5173<br/>96.409<br/>97.846<br/>97.386<br/>96.505<br/>97.386<br/>96.505<br/>97.386<br/>96.505<br/>97.386<br/>96.505<br/>97.386<br/>96.505<br/>97.386<br/>96.505<br/>97.386<br/>96.505<br/>97.386<br/>96.505<br/>97.386<br/>96.505<br/>97.386<br/>96.505<br/>97.386<br/>96.505<br/>97.386<br/>96.505<br/>97.386<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.596<br/>97.596<br/>97.596<br/>97.596<br/>97.596<br/>97.596<br/>97.596<br/>97.596<br/>97.596<br/>97.</th></th>  
  | 11 [18970] 900 900 900 900 900 901 915575 1518 4015557 5118 4015557 5118 4015575 5118 4015575 5118 401557 5134 45186217 534 45186217 534 45186217 534 45186175 534 53187635 801 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 51976052 1505 5197605 1505 519760 1505 519760 1505 519760 1505 519760 1505 519760 1505 519760 1505 519760 1505 519760 1505 519760 1505 519760 1505 519760 1505 519760 1505 51976 51976 5  | $\begin{array}{c} (+) \\$ | 98.238         9           94.251         1           94.251         1           94.251         1           94.251         1           98.734         1           98.734         1           97.238         2           97.238         2           97.238         2           99.002         2           99.003         2           99.005         2           99.005         2           99.005         2           99.005         2           99.005         2           99.005         2           99.005         2           99.005         2           99.007         2           99.007         2           99.007         2           99.008         2           99.007         2           99.008         2           99.008         2           99.008         2           99.011         2           99.023         2           99.033         2           99.047         2      99.058         2 <tr td=""></tr>   
   
  | well-1:8:1         17256         1807           well-1:8:1         18030-1         1837           well-1:8:1         1837-0         1847           well-1:8:1         1837-0         1847           well-1:9:1         18430         1835           well-1:9:1         19450         1915           well-1:9:1         19251         1932           well-1:9:1         1924         1941           well-2:0:1         1947         1967           well-2:0:1         1947         1967           well-2:0:1         1952         1932           well-2:0:1         1947         1967           well-2:0:1         1947         1967           well-2:0:1         19520         1933           w  | $ \begin{array}{cccccccccccccccccccccccccccccccccccc$   | $\begin{array}{c} (+) & -98.98 + 0.00 \\ (+) & -78.378 + $   | 55         Swell-2           84         Swell-2           88         Swell-2           88         Swell-2           88         Swell-2           88         Swell-2           88         Swell-2           91         Swell-2           92         Swell-4           94         Swell-2           94 
       Swell-4           94         Swell-2           95         Swell-2           96         Swell-4           97         Swell-2 </th <th>140         1744           140         1744           141         1818           143         1818           143         1818           143         1818           144         1818           145         1812           143         1818           143         1818           143         1817           143         1817           143         1817           143         1817           144         1817           145         1818           145         1818           145         1818           145         1818           146         1874           147         1944           147         1944           148         197           149         1915           149         1912           149         1912           149         1912           149         1912           141         1414           141         1414           141         1414</th> <th>2 180661<br/>9 181646<br/>0 183566<br/>0 183566<br/>0 183566<br/>0 183566<br/>0 183566<br/>0 183566<br/>0 186690<br/>0 185926<br/>1 18748<br/>0 186690<br/>0 185920<br/>1 18749<br/>1 18748<br/>1 189338<br/>1 199406<br/>1 19940<br/>1 199406<br/>1 19940</th> <th>900 1518 1677 954 1577 555 557 555 800 678 800 678 800 1506 450 981 1674 2403 1725 582 5775 5775 582 5775 582 5775 582 1740 969 442 2402 174 174 265 445 1757 1740 174 174 174 174 174 174 174 174 174 174</th> <th>(+)         (+)           (+)         (+)</th> <th>96.238<br/>97.317<br/>97.326<br/>94.423<br/>94.426<br/>94.565<br/>94.565<br/>94.565<br/>94.565<br/>94.616<br/>97.093<br/>96.02<br/>97.846<br/>95.399<br/>96.02<br/>97.846<br/>96.505<br/>96.5173<br/>96.409<br/>97.846<br/>97.386<br/>96.505<br/>97.386<br/>96.505<br/>97.386<br/>96.505<br/>97.386<br/>96.505<br/>97.386<br/>96.505<br/>97.386<br/>96.505<br/>97.386<br/>96.505<br/>97.386<br/>96.505<br/>97.386<br/>96.505<br/>97.386<br/>96.505<br/>97.386<br/>96.505<br/>97.386<br/>96.505<br/>97.386<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.586<br/>97.596<br/>97.596<br/>97.596<br/>97.596<br/>97.596<br/>97.596<br/>97.596<br/>97.596<br/>97.596<br/>97.</th> | 140         1744           140         1744           141         1818           143         1818           143         1818           143         1818           144         1818           145         1812           143         1818           143         1818           143         1817           143         1817           143         1817           143         1817           144         1817           145         1818           145         1818           145         1818           145         1818           146         1874           147         1944           147         1944           148         197           149         1915           149         1912           149         1912           149         1912           149         1912           141         1414           141         1414           141         1414  
  | 2 180661<br>9 181646<br>0 183566<br>0 183566<br>0 183566<br>0 183566<br>0 183566<br>0 183566<br>0 186690<br>0 185926<br>1 18748<br>0 186690<br>0 185920<br>1 18749<br>1 18748<br>1 189338<br>1 199406<br>1 19940<br>1 199406<br>1 19940   | 900 1518 1677 954 1577 555 557 555 800 678 800 678 800 1506 450 981 1674 2403 1725 582 5775 5775 582 5775 582 5775 582 1740 969 442 2402 174 174 265 445 1757 1740 174 174 174 174 174 174 174 174 174 174  | (+)         (+)           (+)      
  (+)           (+)         (+)           (+)         (+)           (+)         (+) | 96.238<br>97.317<br>97.326<br>94.423<br>94.426<br>94.565<br>94.565<br>94.565<br>94.565<br>94.616<br>97.093<br>96.02<br>97.846<br>95.399<br>96.02<br>97.846<br>96.505<br>96.5173<br>96.409<br>97.846<br>97.386<br>96.505<br>97.386<br>96.505<br>97.386<br>96.505<br>97.386<br>96.505<br>97.386<br>96.505<br>97.386<br>96.505<br>97.386<br>96.505<br>97.386<br>96.505<br>97.386<br>96.505<br>97.386<br>96.505<br>97.386<br>96.505<br>97.386<br>96.505<br>97.386<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.586<br>97.596<br>97.596<br>97.596<br>97.596<br>97.596<br>97.596<br>97.596<br>97.596<br>97.596<br>97.   |
|  |  |  |   
   |  |  |   |   |   
   
   
   |  |  |   
   
  |  
   
   |   |   
  |  
   |               
  |   |  |   
  |  
  |   |  
  |   |  |
| Cample kinse (Cop-A5.8)<br>Schlafer (Cop-B1R)<br>Schlafer (Cop-B1R)<br>Schlafer (Cop-B1R)<br>EX type-1 membran glycopotcin, protective an figen (Cop-B3R)<br>Malyrini & protein (Cop-B4R)<br>Schlafe TNY are required (Cop-B4R)<br>Schlafe TNY are required (Cop-B4R)<br>Exch-Bite protein (Cop-B4R)<br>Exch-Bite protein (Cop-B4R)<br>Schlafe protein (Cop-B4R)<br>Script 1.2,3 (Cop-KL)<br>Bypathesian protein (Cop-B4R)<br>Exch-Bite protein (Cop-B4R)<br>Script 1.2,3 (Cop-KL)<br>Bypathesian receptor glycopotcin (Cop-B4R)<br>II-1 beta hinkine (Cop-B4R)<br>II-1 beta interime (Cop-C1R)<br>II-1 beta interime (Cop-C1R)<br>II-   | A 57R<br>B1R<br>B2R<br>B4R<br>B5R<br>B6R<br>B7R<br>B7R<br>B7R<br>B7R<br>B7R<br>B7R<br>B7R<br>B7  | CPXV195<br>CPXV196<br>CPXV197<br>CPXV197<br>CPXV197<br>CPXV199<br>CPXV201<br>CPXV201<br>CPXV201<br>CPXV201<br>CPXV203<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV207<br>CPXV205<br>CPXV207<br>CPXV205<br>CPXV207<br>CPXV205<br>CPXV207<br>CPXV205<br>CPXV207<br>CPXV205<br>CPXV207<br>CPXV205<br>CPXV207<br>CPXV205<br>CPXV207<br>CPXV205<br>CPXV207<br>CPXV205<br>CPXV207<br>CPXV205<br>CPXV207<br>CPXV205<br>CPXV207<br>CPXV205<br>CPXV207<br>CPXV205<br>CPXV207<br>CPXV205<br>CPXV207<br>CPXV205<br>CPXV207<br>CPXV207<br>CPXV205<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV207<br>CPXV20                      | NoF1-18.8<br>NoF1-18.8<br>NoF1-18.8<br>NoF1-18.8<br>NoF1-18.8<br>NoF1-19.9<br>NoF1-19.9<br>NoF1-19.9<br>NoF1-19.9<br>NoF1-19.9<br>NoF1-19.9<br>NoF1-19.9<br>NoF1-19.9<br>NoF1-19.9<br>NoF1-19.9<br>NoF1-19.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-29.9<br>NoF1-2  | 1 788-07 1794-00<br>1 788-07 1794-00<br>1 803-07 182206<br>1 803-07 182206<br>1 823-07 182206<br>1 823-07 182206<br>1 823-07 182206<br>1 853-01<br>1 853-01<br>1 853-01<br>1 853-01<br>1 853-01<br>1 853-01<br>1 839-54<br>1 839-54<br>1 839-54<br>1 839-54<br>1 839-54<br>1 839-54<br>1 839-54<br>1 939-54<br>1 939 | 594<br>990<br>1518<br>1685<br>954<br>954<br>954<br>954<br>805<br>805<br>805<br>1506<br>1506<br>1506<br>1506<br>978<br>978<br>978<br>978<br>978<br>1003<br>2358<br>1003<br>2450<br>1005<br>1672<br>1009<br>1672<br>1009<br>1670<br>1767<br>2007<br>2007<br>2007<br>2007<br>2007<br>2007<br>2007<br>2  
   | (i)<br>(i)<br>(i)<br>(i)<br>(i)<br>(i)<br>(i)<br>(i)  | 98.382<br>97.324<br>97.324<br>97.507<br>97.28<br>97.38<br>97.29<br>97.29<br>97.333<br>99.29<br>97.333<br>99.29<br>97.333<br>99.29<br>97.333<br>99.29<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.54<br>97.55<br>97.55<br>97.54<br>97.55<br>97.55<br>97.55<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.45<br>94.17<br>95.75<br>94.17<br>94.17<br>94.17<br>94.17<br>94.17<br>94.17<br>94.17<br>94.17<br>94.17<br>94.17<br>94.17<br>94.17<br>94.17<br>94.17<br>94.17<br>94.17<br>94.17<br>94.17<br>94.17<br>94.17<br>94.17<br>94.17<br>94.17<br>94.17<br>94.17<br>94.17<br>94.17<br>94.17<br>94.17<br>94.17<br>95.75<br>94.17<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>95.75<br>9  | Na12-161         10006         10094           Na12-161         81005         10094           Na12-181         81005         10054           Na12-181         81005         10054           Na12-181         81005         10054           Na12-191         85566         18077           Na12-191         85566         18077           Na12-191         85566         18077           Na12-191         85566         18077           Na12-192         89106         19037           Na12-193         89105         19037           Na12-194         91156         19239           Na12-194         91156         19239           Na12-204         90057         19428           Na12-204         90057         19408           Na12-204         90058         19408           Na12-204         90058         19408           Na12-204         90058         19408           Na12-204         90056         19438           Na12-204         10452         10453           Na12-204         10456         12477           Na12-204         10456         12477           Na12-212  
   
   | 900<br>900<br>1518<br>1611<br>954<br>534<br>801<br>738<br>1506<br>225<br>254<br>801<br>1306<br>225<br>254<br>801<br>1305<br>225<br>1306<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1225<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>1305<br>130  
  | (i)         (i)           (ii)         (i)           (iii)         (i)           (i)         (i)   | 98.252         No.           94.257         No.           98.324         No.           98.324         No.           97.238         No.           97.238         No.           97.238         No.           97.238         No.           97.238         No.           97.333         No.           99.248         No.           99.022         No.           99.002         No.           99.002         No.           99.003         No.           99.004         No.           99.005         No.           99.007         No.           99.007         No.           99.007         No.           90.007         No.           90.007         No.           90.007         No.           90.007         No.           91.003         No.           94.005         No.           94.005         No.           95.014         No.           96.028         No.           96.732         No.           96.732         No.           97.17 <no.< td=""></no.<>  
   
  | Hall 1:16         100           Hall 1:17         100           Hall 1:17 <th>171 [18970] 900, 900, 900, 900, 900, 900, 903, 905, 905, 905, 804, 805, 905, 915, 805, 805, 805, 805, 805, 805, 805, 80</th> <th></th> <th>98.128         9           98.128         9           98.211         9           98.713         9           98.713         9           97.238         9           97.238         9           97.238         9           99.248         9           99.248         9           99.200         9           98.733         9           98.633         9           96.633         9           96.633         9           96.634         9           96.755         9           96.757         9           96.757         9           96.757         9           96.757         9           97.113         9           9         9           9         9           9         9           9         9           9         9           9         9           9         9           9         9           9         9           9         9           9         9           9         9     <!--</th--><th>well-1:8:1         17256         1801           well-1:8:1         81371         1857           well-1:8:1         81371         1857           well-1:9:1         81371         1857           well-1:9:1         81371         1854           well-1:9:1         81371         1854           well-1:9:1         81371         1856           well-1:9:1         18566         1875           well-1:9:1         18370         1857           well-1:9:1         18370         1857           well-1:9:1         18370         1857           well-1:9:1         19370         1937           well-1:9:1         19374         1937           well-1:9:1         19375         1937           well-1:9:1         19374         1937           well-1:9:1         19374         1937           well-1:9:1         19375         1937           well-1:9:1         19374         1937           well-1:9:1         19375         1937           well-1:9:1         19375         1937           well-1:9:1         19375         1937           well-1:9:1         1938         1938</th><th><math display="block"> \begin{array}{cccccccccccccccccccccccccccccccccccc</math></th><th><math display="block">\begin{array}{c} (+) &amp; -98.98 \\ (+) &amp; -98.98 \\ (+) &amp; -97.33 \\ (+) &amp; -90.62 \\ (+) &amp; -90.62 \\ (+) &amp; -90.62 \\ (+) &amp; -99.87 \\</math></th><th>Second Second Second</th><th><ul> <li>148</li> <li>1744</li> <li>148</li> <li>148</li> <li>148</li> <li>148</li> <li>148</li> <li>149</li> <li>149</li></ul></th><th>2 180061<br/>9 181646<br/>0 183566<br/>0 184623<br/>1 184623<br/>0 18566<br/>0 18556<br/>1 18567<br/>1 18578<br/>0 18567<br/>1 18578<br/>0 18567<br/>1 1957<br/>0 1857<br/>0 1957<br/>0 1957</th><th>900<br/>1518<br/>1677<br/>954<br/>555<br/>555<br/>555<br/>570<br/>1596<br/>678<br/>801<br/>678<br/>801<br/>678<br/>801<br/>1096<br/>678<br/>801<br/>1096<br/>678<br/>801<br/>1096<br/>1096<br/>1096<br/>1096<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>100</th><th>(i)         (i)           (i)        
(i)</th><th>96.238<br/>97.317<br/>97.296<br/>94.626<br/>94.565<br/>94.565<br/>94.565<br/>94.565<br/>94.8872<br/>94.02<br/>94.03<br/>94.03<br/>96.872<br/>94.03<br/>96.855<br/>96.02<br/>96.02<br/>96.02<br/>96.02<br/>96.02<br/>96.02<br/>96.02<br/>96.02<br/>96.02<br/>96.02<br/>97.846<br/>95.855<br/>96.02<br/>97.846<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.84</th></th>   | 171 [18970] 900, 900, 900, 900, 900, 900, 903, 905, 905, 905, 804, 805, 905, 915, 805, 805, 805, 805, 805, 805, 805, 80   |  | 98.128         9           98.128         9           98.211         9           98.713         9           98.713         9           97.238         9           97.238         9           97.238         9           99.248         9           99.248         9           99.200         9           98.733         9           98.633         9           96.633         9           96.633         9           96.634         9           96.755         9           96.757         9           96.757         9           96.757         9           96.757         9           97.113         9           9         9           9         9           9         9           9         9           9         9           9         9           9         9           9         9           9         9           9         9           9         9           9         9 </th <th>well-1:8:1         17256         1801           well-1:8:1         81371         1857           well-1:8:1         81371         1857           well-1:9:1         81371         1857           well-1:9:1         81371         1854           well-1:9:1         81371        
1854           well-1:9:1         81371         1856           well-1:9:1         18566         1875           well-1:9:1         18370         1857           well-1:9:1         18370         1857           well-1:9:1         18370         1857           well-1:9:1         19370         1937           well-1:9:1         19374         1937           well-1:9:1         19375         1937           well-1:9:1         19374         1937           well-1:9:1         19374         1937           well-1:9:1         19375         1937           well-1:9:1         19374         1937           well-1:9:1         19375         1937           well-1:9:1         19375         1937           well-1:9:1         19375         1937           well-1:9:1         1938         1938</th> <th><math display="block"> \begin{array}{cccccccccccccccccccccccccccccccccccc</math></th> <th><math display="block">\begin{array}{c} (+) &amp; -98.98 \\ (+) &amp; -98.98 \\ (+) &amp; -97.33 \\ (+) &amp; -90.62 \\ (+) &amp; -90.62 \\ (+) &amp; -90.62 \\ (+) &amp; -99.87 \\</math></th> <th>Second Second Second</th> <th><ul> <li>148</li> <li>1744</li> <li>148</li> <li>148</li> <li>148</li> <li>148</li> <li>148</li> <li>149</li> <li>149</li></ul></th> <th>2 180061<br/>9 181646<br/>0 183566<br/>0 184623<br/>1 184623<br/>0 18566<br/>0 18556<br/>1 18567<br/>1 18578<br/>0 18567<br/>1 18578<br/>0 18567<br/>1 1957<br/>0 1857<br/>0 1957<br/>0 1957</th> <th>900<br/>1518<br/>1677<br/>954<br/>555<br/>555<br/>555<br/>570<br/>1596<br/>678<br/>801<br/>678<br/>801<br/>678<br/>801<br/>1096<br/>678<br/>801<br/>1096<br/>678<br/>801<br/>1096<br/>1096<br/>1096<br/>1096<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1095<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1096<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>1007<br/>100</th> <th>(i)         (i)           (i)         (i)</th> <th>96.238<br/>97.317<br/>97.296<br/>94.626<br/>94.565<br/>94.565<br/>94.565<br/>94.565<br/>94.8872<br/>94.02<br/>94.03<br/>94.03<br/>96.872<br/>94.03<br/>96.855<br/>96.02<br/>96.02<br/>96.02<br/>96.02<br/>96.02<br/>96.02<br/>96.02<br/>96.02<br/>96.02<br/>96.02<br/>97.846<br/>95.855<br/>96.02<br/>97.846<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>96.02<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.846<br/>97.84</th> | well-1:8:1         17256         1801           well-1:8:1         81371         1857           well-1:8:1         81371         1857           well-1:9:1         81371         1857           well-1:9:1         81371         1854           well-1:9:1         81371         1854           well-1:9:1         81371         1856           well-1:9:1         18566         1875           well-1:9:1         18370         1857           well-1:9:1         18370         1857           well-1:9:1         18370         1857           well-1:9:1         19370         1937           well-1:9:1         19374         1937           well-1:9:1         19375         1937           well-1:9:1         19374         1937           well-1:9:1         19374         1937           well-1:9:1         19375         1937           well-1:9:1         19374         1937           well-1:9:1         19375         1937           well-1:9:1         19375         1937           well-1:9:1         19375         1937           well-1:9:1         1938         1938   
   | $ \begin{array}{cccccccccccccccccccccccccccccccccccc$   | $\begin{array}{c} (+) & -98.98 \\ (+) & -98.98 \\ (+) & -97.33 \\ (+) & -90.62 \\ (+) & -90.62 \\ (+) & -90.62 \\ (+) & -99.87 \\$   | Second   
   | <ul> <li>148</li> <li>1744</li> <li>148</li> <li>148</li> <li>148</li> <li>148</li> <li>148</li> <li>149</li> <li>149</li></ul>  | 2 180061<br>9 181646<br>0 183566<br>0 184623<br>1 184623<br>0 18566<br>0 18556<br>1 18567<br>1 18578<br>0 18567<br>1 18578<br>0 18567<br>1 1957<br>0 1857<br>0 1957<br>0 1957 |
900<br>1518<br>1677<br>954<br>555<br>555<br>555<br>570<br>1596<br>678<br>801<br>678<br>801<br>678<br>801<br>1096<br>678<br>801<br>1096<br>678<br>801<br>1096<br>1096<br>1096<br>1096<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1095<br>1096<br>1096<br>1096<br>1096<br>1096<br>1096<br>1096<br>1096<br>1096<br>1096<br>1096<br>1096<br>1096<br>1096<br>1096<br>1096<br>1096<br>1096<br>1096<br>1096<br>1096<br>1096<br>1096<br>1096<br>1096<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>1007<br>100   | (i)         (i)   | 96.238<br>97.317<br>97.296<br>94.626<br>94.565<br>94.565<br>94.565<br>94.565<br>94.8872<br>94.02<br>94.03<br>94.03<br>96.872<br>94.03<br>96.855<br>96.02<br>96.02<br>96.02<br>96.02<br>96.02<br>96.02<br>96.02<br>96.02<br>96.02<br>96.02<br>97.846<br>95.855<br>96.02<br>97.846<br>97.846<br>96.02<br>97.846<br>96.02<br>97.846<br>96.02<br>97.846<br>96.02<br>97.846<br>96.02<br>97.846<br>96.02<br>97.846<br>96.02<br>97.846<br>96.02<br>97.846<br>96.02<br>97.846<br>96.02<br>97.846<br>96.02<br>97.846<br>96.02<br>97.846<br>96.02<br>97.846<br>96.02<br>97.846<br>96.02<br>97.846<br>96.02<br>97.846<br>96.02<br>97.846<br>96.02<br>97.846<br>96.02<br>97.846<br>96.02<br>97.846<br>96.02<br>97.846<br>96.02<br>97.846<br>96.02<br>97.846<br>96.02<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.846<br>97.84  |
| Campite kinss: (Cop-A5.8)           Schhern (Cop-BR)           Schhern (Cop-BR)           Schhern (Cop-BR)           BEY type -1 membrane glycopnotelia, protective an tigen (Cop-BSR)           Malyrin (Cop-BR)           EEY type -1 membrane glycopnotelia, protective an tigen (Cop-BSR)           Malyrin King-BR)           EEY type -1 membrane glycopnotelia, protective an tigen (Cop-BSR)           Schulz HN-1 receptor-like protein (Cop-BSR)           Schulz HN-1 receptor-like protein (Cop-BSR)           Bey North Cop-BSR)           Schulz HN-1 receptor-like protein (Cop-BSR)           Bey Detecking Loristic (Cop-BSR)           Schulz HN-1 receptor (Cop-BIR)           Schulz HN-1 receptor (Cop-BIR)           Beyndreid aprotein (Cop-FISI)           Hypotheridia protein (Cop-FISI)           Hypotheridia protein (Cop-FISI)           Beyndreid aprotein (Cop-FISI)           Beyndreidia protein (Cop-CIA)           Sardner glycopnetia           Malyrin (Cop-CIA)           Sardner glycopnetia           Malyrin (Cop-CIA)           Sardner glycopnetia           Malyrin (Cop-C  | A 57R<br>B1R<br>B2R<br>B4R<br>B5R<br>B5R<br>B5R<br>B7R<br>B7R<br>B7R<br>B1R<br>B1R<br>B1R<br>B1R<br>B1R<br>B1R<br>B1R<br>B1  | CPXV195<br>CPXV196<br>CPXV197<br>CPXV197<br>CPXV197<br>CPXV197<br>CPXV200<br>CPXV200<br>CPXV201<br>CPXV201<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV205<br>CPXV20                      | NoF1-18 (1997)<br>NoF1-19 (1997)<br>NoF1-20 (1997)<br>NoF1-2  | 1 17860 1 179400<br>1 18707 1 18206<br>1 18707 1 18206<br>1 18707 1 18206<br>1 1870 1 18206<br>1 1870 1 18206<br>1 1870 1 18500<br>1 1870 1 1870<br>1 1877 1 1830<br>1 1857 1 1830<br>1 1877 1 1830<br>1 1977 1 2 1877<br>1 1896 1 18887<br>1 1996 1 19887<br>1 1996 1 1987<br>1 1996 1 1998<br>1 1996 1 1987<br>1 1996 1 1998<br>1 1996 1 1997<br>1 1996 1 1997<br>1 1996 1 1997<br>1 1996 1 1997<br>1 1996 1 1998<br>1 1996 1 1997<br>1 1996 1 1998<br>1 1996 1 1997<br>1 1996 1 1998<br>1 1996 1 1997<br>1 1996 1 1997<br>1 1996 1 1998<br>1 1996 1 1997<br>1 1996 1 1998<br>1 1996 1 1997<br>1 1996 1 1997  | 594<br>990<br>1518<br>954<br>954<br>954<br>954<br>954<br>801<br>1055<br>225<br>854<br>804<br>1005<br>225<br>864<br>450<br>450<br>450<br>450<br>450<br>450<br>450<br>450<br>450<br>45   | (i)<br>(i)<br>(i)<br>(i)<br>(i)<br>(i)<br>(i)<br>(i)<br>(i)<br>(i)   
  | 98383<br>97332<br>94257<br>97504<br>98738<br>100<br>97739<br>99028<br>97333<br>99002<br>97333<br>99002<br>97333<br>99002<br>97333<br>99002<br>97333<br>99002<br>97333<br>98235<br>97339<br>92077<br>92235<br>97337<br>92077<br>8925<br>973346<br>   | Mail 2:00         12000         12000           Mail 2:161         10000         10009           Mail 2:161         10105         10105           Mail 2:161         10105         10105           Mail 2:161         10105         10105           Mail 2:161         10101         10105           Mail 2:101         10105         10105           Mail 2:101         10101         10101           Mail 2:101         10106         10101           Mail 2:101         10106         10101           Mail 2:101         10106         10101  
   
   | 900<br>900<br>954<br>1518<br>801<br>1506<br>225<br>864<br>1035<br>864<br>1035<br>864<br>1035<br>238<br>1023<br>1725<br>1098<br>2382<br>1098<br>1023<br>1725<br>1098<br>2382<br>1098<br>2382<br>1674<br>-<br>-<br>-<br>1113<br>582<br>2385<br>1674<br>-<br>-<br>1113<br>582<br>2385<br>1674<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-  | $\begin{array}{c} (i) \\ (i) \\$ | 98.228         No.           94.257         No.           94.257         No.           98.244         No.           98.242         No.           98.242         No.           97.238         No.           97.238         No.           99.022         No.           99.025         No.           99.027         No.           99.028         No.           99.029         No.           99.020         No.           99.021         No.           99.022         No.           99.023         No.           99.024         No.           97.031         No.           97.233         No.           97.233         No.           95.041         No.           95.051         No.           95.053         No.           95.053         No.           97.17         No.           95.57
        No.           97.17         No.           97.17         No.           97.17         No.           97.17         No.           97.17         No.  
  | Hall-11-16         NO           Mark         Status           Hall         Hall  
   
   | 11 [18970] 400 401<br>4018257 1518 4018257<br>551 [184258] 4018257<br>551 [184258] 1518 4018257<br>551 [184258] 1518<br>551 [184258] 1518<br>551 [18458] 1801<br>551 [18458] 1801<br>55 | $\begin{array}{c} (+) \\ (+)
\\ (+) \\$ | 98.128         9           94.257         1           94.257         1           98.711         1           98.713         1           98.714         1           98.717         1           97.238         2           97.238         2           97.238         2           99.244         5           99.230         9           99.333         9           99.333         9           99.333         9           99.335         9           99.335         9           99.335         9           99.335         9           99.335         9           99.335         9           99.335         9           99.335         9           99.335         9           99.335         9           99.335         9           99.336         9           99.337         9           90.338         9           95.548         9           96.757         9           96.752         9      96.752         9      97.   
   | well-1:8:1         17256         8017           well-1:8:1         10255         8117           well-1:8:1         81374         1847           well-1:8:1         81374         1847           well-1:9:1         18438         18374           well-1:9:1        
18438         18374           well-1:9:1         18448         18374           well-1:9:1         18478         1847           well-1:9:1         19472         1921           well-1:9:1         19254         1932           well-1:9:1         19254         1932           well-2:0:1         19474         1961           well-2:0:1         19474         1967           well-2:0:1         19472         1947   | $ \begin{array}{cccccccccccccccccccccccccccccccccccc$   | $\begin{array}{c} (+) & -98.98 \\ (+) & -98.98 \\ (+) & -96.23 \\ (+) & -96.23 \\ (+) & -96.23 \\ (+) & -96.23 \\ (+) & -96.23 \\ (+) & -98.73 \\ (+) & -98.73 \\ (+) & -98.73 \\ (+) & -98.73 \\ (+) & -98.73 \\ (+) & -98.73 \\ (+) & -98.73 \\ (+) & -98.73 \\ (+) & -98.73 \\ (+) & -99.23 \\$   | 5         Switz           8         Switz           9  
   | 140         1744           145         1744           146         1741           147         1802           148         18189           149         1857           149         1857           149         1857           149         18528           149         18428           149         18528           149         1857           149         18528           149         1857           149         18528           149         1875           149         1875           149         1875           149         1875           149         1915           149         1915           149         1915           149         1915           141         1915           142         1915           143         1915           143         1915           141         1917           141         1917           141         1917           141         1917           141         1917           141         1917  
   | 2 180661<br>9 181646<br>9 181646<br>9 18566<br>9 18566<br>9 185265<br>9 185245<br>9 19145<br>9 191   | 900<br>1518<br>1677<br>954<br>557<br>555<br>555<br>555<br>505<br>505<br>505<br>505  | (i)         (i)                           | 96.238<br>97.317<br>91.236<br>94.423<br>94.426<br>94.456<br>94.456<br>94.456<br>94.456<br>94.456<br>94.456<br>94.456<br>94.456<br>94.456<br>94.456<br>94.456<br>94.207<br>97.386<br>96.207<br>97.386<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>97.505<br>97.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96.505<br>96   
   |

**Table S6.** Patristic distances between CPXV clusters and OPXV species calculated from the Maximum likelihood (ML) and Bayesian inference (BI) trees of 62 conserved genes, 87 OPXV whole genomes, core genomes and orthologous genes.

						ML tree	of 62 conser	ved genes							
	VACV	VACV-like	CPXV-like1	CPXV-like2	VARV-like	TATV	CMLV	ABATINO	MPXV	ECTV	CV-Abatino-	VARV	AKMV	AKPV	New World
VACV															
VACV like	0.026														
VAC V-IIKC	0.020	0.027													
CPXV-like1	0.045	0.037													
CPXV-like2	0.050	0.042	0.048												
VARV-like	0.031	0.021	0.043	0.049											
TATV	0.036	0.026	0.048	0.053	0.016										
CMIN	0.040	0.020	0.052	0.059	0.020	0.011									
CMLV	0.040	0.050	0.032	0.038	0.020	0.011									
ABATINO	0.046	0.038	0.049	0.055	0.044	0.049	0.053								
MPXV	0.034	0.030	0.043	0.048	0.033	0.037	0.041	0.044							
ECTV	0.044	0.038	0.048	0.053	0.043	0.047	0.052	0.028	0.045						
ECTV-Abatino-like	0.041	0.033	0.044	0.049	0.039	0.044	0.048	0.037	0.041	0.037					
VADV	0.041	0.027	0.050	0.047	0.035	0.019	0.022	0.050	0.052	0.057	0.054				
VARV	0.040	0.037	0.039	0.004	0.020	0.018	0.022	0.039	0.032	0.000	0.034	0.007			
AKMV	0.082	0.074	0.085	0.091	0.080	0.085	0.089	0.084	0.083	0.084	0.078	0.095			
AKPV	0.170	0.162	0.174	0.179	0.169	0.173	0.178	0.172	0.171	0.173	0.167	0.184	0.148		
New World	0.693	0.685	0.697	0.702	0.692	0.696	0.700	0.695	0.694	0.696	0.690	0.707	0.671	0.703	
						RI tree o	f 62 concer	an a							
	NA CN	VA CW PL	CDXX PL 1	CDXXV PL A	XADX/PL	TATV	CMI V	ADATINO	MDVN	DOTA	W7 41 41 1	VADV	ATZMAN	A TZDAZ	N. W. 11
	VACV	VAC V-like	CPAV-like1	CPAV-like2	VAR V-like	IAIV	CMLV	ADATINU	MPAV	ECIV	v-Abauno-	VAKV	AKIVIV	AKPV	New world
VACV															
VACV-like	0.026														
CPXV-like1	0.044	0.036													
CPYV-like?	0.051	0.043	0.048												
VA DV PL	0.031	0.043	0.048	0.040											
VAR V-IIKE	0.030	0.021	0.042	0.049											
TATV	0.035	0.026	0.047	0.054	0.016										
CMLV	0.039	0.030	0.051	0.058	0.020	0.011									
ABATINO	0.045	0.038	0.048	0.055	0.044	0.048	0.052								
MPYV	0.038	0.030	0.045	0.052	0.036	0.041	0.045	0.046							
FOTM	0.036	0.030	0.045	0.052	0.050	0.041	0.043	0.040	0.047						
ECIV	0.046	0.038	0.048	0.055	0.044	0.049	0.053	0.025	0.047						
ECTV-Abatino-like	0.040	0.032	0.043	0.050	0.038	0.043	0.047	0.036	0.041	0.037					
VARV	0.046	0.036	0.057	0.064	0.026	0.018	0.022	0.059	0.051	0.059	0.054				
AKMV	0.080	0.073	0.083	0.090	0.079	0.083	0.087	0.082	0.081	0.083	0.077	0.094			
AKDV	0.166	0.158	0.160	0.176	0.165	0.160	0.173	0.168	0.167	0.168	0.163	0.180	0.220		
	0.100	0.130	0.109	0.170	0.105	0.109	0.175	0.100	0.107	0.100	0.105	0.100	0.220	0.425	
			11/1411	11/14/	04/6	0450	11/14/1	04/9	11/1/8	114/9	11/1//	0441	0.405	11/145	
New World	0.427	0.419	0.430	0.437	0.420	0.450	0.434	0.427	0.420	0.42)	0.424	0.111	0.405	0.435	I
New World	0.427	0.419	0.430	0.437	0.420	ML tree of	87 OPXV wł	nole genome	0.420 S	0.42)	0.424	0.1111	0.405	0.435	
New World	VACV	VACV-like	CPXV-like1	CPXV-like2	VARV-like	ML tree of S TATV	87 OPXV wł CMLV	ABATINO	s MPXV	ECTV	TV-Abatino-	VARV	AKMV	AKPV	New World
New World VACV	VACV	VACV-like	CPXV-like1	CPXV-like2	VARV-like	ML tree of S TATV	87 OPXV wł CMLV	ole genome ABATINO	s MPXV	ECTV	CV-Abatino-	VARV	AKMV	AKPV	New World
New World VACV VACV	0.427 VACV	VACV-like	CPXV-like1	CPXV-like2	VARV-like	ML tree of 8 TATV	87 OPXV wł CMLV	ole genome: ABATINO	s MPXV	ECTV	CV-Abatino-	VARV	AKMV	AKPV	New World
VACV VACV-like	0.427 VACV	VACV-like	CPXV-like1	CPXV-like2	VARV-like	ML tree of a TATV	87 OPXV wł CMLV	ABATINO	MPXV	ECTV	TV-Abatino-	VARV	AKMV	AKPV	New World
VACV VACV-like CPXV-like 1	0.427 VACV 0.026 0.043	0.419 VACV-like	CPXV-like1	CPXV-like2	VARV-like	ML tree of a TATV	87 OPXV wł CMLV	ABATINO	s MPXV	ECTV	IV-Abatino-	VARV	AKMV	AKPV	New World
New World VACV VACV-like CPXV-like1 CPXV-like2	0.427 VACV 0.026 0.043 0.063	0.419 VACV-like	0.430 CPXV-like1	CPXV-like2	VARV-like	ML tree of 8 TATV	6,454 87 OPXV wt CMLV	ABATINO	MPXV	ECTV	IV-Abatino-	VARV	AKMV	AKPV	New World
New World VACV VACV-like CPXV-like1 CPXV-like2 VARV-like	0.427 VACV 0.026 0.043 0.063 0.037	0.419 VACV-like 0.034 0.053 0.027	0.052 0.031	0.051	VARV-like	ML tree of t TATV	6.454 87 OPXV wł CMLV	ole genome: ABATINO	MPXV	ECTV	IV-Abatino-	VARV	AKMV	AKPV	New World
New World VACV VACV-like CPXV-like CPXV-like VARV-like TATV	0.427 VACV 0.026 0.043 0.063 0.037 0.041	0.419 VACV-like 0.034 0.053 0.027 0.031	0.430 CPXV-like1 0.052 0.031 0.036	0.437 CPXV-like2	0.420 VARV-like	ML tree of 8 TATV	6.434 87 OPXV wł CMLV	ABATINO	s MPXV	ECTV	IV-Abatino-	VARV	AKMV	AKPV	New World
New World VACV VACV-like CPXV-like 1 CPXV-like 2 VARV-like TATV CMLV	0.427 VACV 0.026 0.043 0.063 0.037 0.041 0.045	0.419 VACV-like 0.034 0.053 0.027 0.031 0.036	0.430 CPXV-like1 0.052 0.031 0.036 0.040	0.437 CPXV-like2	0.420 VARV-like 0.016 0.020	0.012	6.434 87 OPXV wł CMLV	ABATINO	s MPXV	ECTV	IV-Abatino-	VARV	AKMV	AKPV	New World
VACV VACV- VACV-like CPXV-like1 CPXV-like2 VARV-like TATV CMLV DATIVO	VACV 0.026 0.043 0.063 0.037 0.041 0.045	0.419 VACV-like 0.034 0.053 0.027 0.031 0.036	0.430 CPXV-like1 0.052 0.031 0.036 0.040 0.040	0.437 CPXV-like2	0.420 VARV-like 0.016 0.020 0.048	0.012 0.012	0.434 87 OPXV wh CMLV	ABATINO	s MPXV	ECTV	IV-Abatino-	VARV	AKMV	AKPV	New World
New World VACV VACV-like CPXV-like1 CPXV-like2 VARV-like TATV CMLV ABATINO	VACV 0.026 0.043 0.063 0.037 0.041 0.045 0.060	VACV-like 0.034 0.053 0.027 0.031 0.036 0.051 0.051	0.430 CPXV-like1 0.052 0.031 0.036 0.040 0.049	0.437 CPXV-like2 0.051 0.055 0.059 0.061	0.420 VARV-like 0.016 0.020 0.048	0.012 0.012 0.053	0.434 87 OPXV wh CMLV 0.057	ABATINO	s MPXV	ECTV	IV-Abatino-	VARV	AKMV	AKPV	New World
VACV VACV-like CPXV-like1 CPXV-like2 VARV-like TATV CMLV ABATINO MPXV	0.427 VACV 0.026 0.043 0.063 0.037 0.041 0.045 0.060 0.039	VACV-like 0.034 0.053 0.027 0.031 0.036 0.051 0.072	0.430 CPXV-like1 0.052 0.031 0.036 0.040 0.049 0.050	0.437 CPXV-like2 0.051 0.055 0.059 0.061 0.069	0.420 VARV-like 0.016 0.020 0.048 0.043	0.012 0.012 0.053 0.048	0.434 87 OPXV wł CMLV 0.057 0.052	abe genome: ABATINO	s MPXV	ECTV	IV-Abatino-	VARV	AKMV	AKPV	New World
New World VACV VACV-like CPXV-like1 CPXV-like2 VARV-like TATV CMLV ABATINO MPXV ECTV	VACV           0.026           0.043           0.063           0.037           0.041           0.045           0.060           0.039	0.419 VACV-like 0.034 0.053 0.027 0.031 0.036 0.051 0.072 0.056	CPXV-like1 0.052 0.031 0.036 0.040 0.049 0.050 0.055	0.437 CPXV-like2 0.051 0.055 0.059 0.061 0.069 0.066	VARV-like 0.016 0.020 0.048 0.043 0.054	0.450 ML tree of 8 TATV 0.012 0.053 0.048 0.058	0.434 87 OPXV wł CMLV 0.057 0.055 0.062	0.429 aba genome: ABATINO 0.067 0.030	0.428 MPXV 0.072	ECTV	IV-Abatino-	VARV	AKMV	AKPV	New World
New World VACV VACV-like CPXV-like1 CPXV-like2 VARV-like TATV CMLV ABATINO MPXV ECTV ECTV-Abatino-like	VACV 0.026 0.043 0.063 0.037 0.041 0.045 0.060 0.039 0.066 0.062	VACV-like 0.034 0.053 0.027 0.031 0.036 0.051 0.052 0.052	CPXV-like1 0.052 0.031 0.036 0.040 0.049 0.050 0.055 0.051	0.437 CPXV-like2 0.051 0.055 0.059 0.061 0.069 0.066 0.062	VARV-like VARV-like 0.016 0.020 0.048 0.043 0.054 0.050	0.450 ML tree of 8 TATV 0.012 0.053 0.048 0.058 0.054	0.434 87 OPXV wł CMLV 0.057 0.057 0.052 0.062 0.058	0.067 0.0067 0.030 0.046	0.072 0.068	ECTV	IV-Abatino-	VARV	AKMV	AKPV	New World
New World VACV VACV-like CPXV-like 1 CPXV-like 2 VARV-like TATV CMLV ABATINO MPXV ECTV ECTV Abatino-like VARV	VACV 0.026 0.043 0.063 0.037 0.041 0.045 0.060 0.039 0.066 0.062	VACV-like 0.034 0.053 0.027 0.031 0.036 0.051 0.072 0.056 0.052 0.043	0.430 CPXV-like1 0.052 0.031 0.036 0.040 0.049 0.050 0.055 0.051 0.047	0.437 CPXV-like2 0.051 0.055 0.059 0.061 0.069 0.066 0.066	0.016 0.016 0.020 0.048 0.043 0.054 0.050 0.027	0.450 ML tree of 8 TATV 0.012 0.053 0.048 0.058 0.054 0.019	0.434 87 OPXV wi CMLV 0.057 0.052 0.052 0.052 0.052	0.067 0.067 0.067 0.067 0.067 0.064	0.420 s MPXV 0.072 0.068 0.059	ECTV ECTV 0.052 0.070	0.424	VARV	AKMV	AKPV	New World
New World VACV VACV-like CPXV-like 1 CPXV-like 2 VARV-like TATV CMLV ABATINO MPXV ECTV ECTV-Abatino-like VARV AKMV	0.427           VACV           0.026           0.043           0.063           0.037           0.041           0.045           0.060           0.039           0.066           0.062           0.096	VACV-like 0.034 0.053 0.027 0.031 0.036 0.051 0.072 0.056 0.052 0.041 0.052 0.043 0.057 0.057 0.05 0.05	0.430 CPXV-like1 0.052 0.031 0.040 0.040 0.049 0.055 0.051 0.047 0.085	0.437 CPXV-like2 0.051 0.055 0.059 0.061 0.066 0.066 0.066	VARV-like VARV-like VARV-like 0.016 0.020 0.048 0.043 0.054 0.050 0.027 0.084	0.012 0.012 0.012 0.053 0.048 0.058 0.054 0.054	0.434 87 OPXV wł CMLV 0.057 0.052 0.062 0.058 0.023	0.067 0.0067 0.030 0.046	0.420 s MPXV 0.072 0.068 0.059	ECTV ECTV 0.052 0.070	V-Abatino-	VARV	AKMV	AKPV	New World
New World VACV VACV-like CPXV-like 1 CPXV-like 2 VARV-like TATV CMLV ABATINO MPXV ECTV ECTV-Abatino-like VARV AKMV KPV	VACV 0.026 0.043 0.063 0.037 0.041 0.060 0.039 0.066 0.062 0.052 0.096	VACV-like 0.034 0.053 0.027 0.031 0.065 0.051 0.072 0.056 0.052 0.043 0.043 0.072 0.170 0.	0.430 CPXV-like1 0.052 0.031 0.036 0.040 0.055 0.051 0.047 0.085 0.170 0.170	0.437 CPXV-like2 0.051 0.055 0.059 0.066 0.066 0.066 0.066 0.066 0.066	VARV-like VARV-like 0.016 0.016 0.020 0.048 0.043 0.054 0.050 0.027 0.084 0.127	0.012 0.012 0.053 0.048 0.058 0.054 0.019 0.089	0.0334 <b>S7 OPXV wi</b> <b>CMLV</b> 0.057 0.052 0.062 0.058 0.023 0.023 0.195	0.067 0.0067 0.030 0.046 0.064 0.064	0.420 s MPXV 0.072 0.068 0.059 0.105	ECTV ECTV 0.052 0.070 0.095	0.424 IV-Abatino-	VARV		AKPV	New World
New World VACV VACV-like CPXV-like1 CPXV-like2 VARV-like TATV CMLV ABATINO MPXV ECTV ECTV-Abatino-like VARV AKMV AKMV	VACV 0.026 0.043 0.063 0.037 0.041 0.045 0.060 0.039 0.066 0.062 0.052 0.096 0.188	VACV-like 0.034 0.053 0.027 0.031 0.036 0.051 0.072 0.056 0.052 0.043 0.087 0.179	CPXV-like1 0.052 0.031 0.036 0.040 0.040 0.055 0.055 0.055 0.047 0.085 0.178 0	0.437 CPXV-like2 0.051 0.055 0.059 0.061 0.066 0.066 0.066 0.066 0.066 0.096 0.189	0.016 0.016 0.020 0.048 0.043 0.054 0.054 0.027 0.084 0.177	0.012 0.012 0.053 0.048 0.058 0.054 0.054 0.019 0.089 0.181	0.057 CMLV 0.057 0.052 0.052 0.052 0.052 0.052 0.053 0.023 0.093 0.185	0.06 genome: ABATINO 0.067 0.030 0.046 0.064 0.088 0.180	0.420 s MPXV 0.072 0.068 0.059 0.103 0.195	0.052 0.052 0.070 0.093 0.185	0.424 IV-Abatino-	VARV 0.100 0.192	AKMV	AKPV	New World
New World VACV VACV-like CPXV-like1 CPXV-like2 VARV-like TATV CMLV ABATINO MPXV ECTV ECTV ECTV-Abatino-like VARV AKMV AKMV New World	VACV 0.026 0.043 0.063 0.037 0.041 0.045 0.060 0.039 0.066 0.052 0.096 0.052 0.096 0.188 0.744	VACV-like 0.034 0.053 0.027 0.031 0.036 0.051 0.072 0.056 0.052 0.043 0.087 0.179 0.735	CPXV-like1 0.052 0.031 0.036 0.040 0.040 0.040 0.055 0.051 0.051 0.055 0.051 0.085 0.178 0.733 0.733 0.730 0.430 0.440 0.440 0.440 0.440 0.440 0.440 0.440 0.440 0.440 0.440 0.440 0.440 0.440 0.440 0.440 0.455 0.473 0.455 0.473 0.455 0	CPXV-like2 0.051 0.055 0.059 0.061 0.066 0.066 0.066 0.096 0.096 0.189 0.745	0.423           VARV-like           0.016           0.020           0.048           0.054           0.050           0.027           0.084           0.177           0.733	0.012 0.012 0.053 0.048 0.058 0.054 0.019 0.089 0.181 0.737	0.434 <b>S7 OPXV wit</b> <b>CMLV</b> 0.057 0.052 0.062 0.058 0.093 0.185 0.741	0.025 ABATINO ABATINO 0.067 0.030 0.046 0.064 0.068 0.180 0.736	0.420 s MPXV 0.072 0.065 0.103 0.195 0.751	ECTV ECTV 0.052 0.070 0.093 0.185 0.741	0.424 IV-Abatino- 0.065 0.089 0.181 0.737	VARV 0.100 0.192 0.748	AKMV AKMV 0.161 0.161	0.733 AKPV 0.740	New World
New World VACV VACV-like CPXV-like1 CPXV-like2 VARV-like TATV CMLV ABATINO MPXV ECTV ECTV-Abatino-like VARV AKPV New World	VACV 0.026 0.043 0.063 0.037 0.041 0.045 0.060 0.039 0.066 0.062 0.052 0.096 0.188 0.744	0.419           VACV-like           0.034           0.053           0.027           0.031           0.036           0.051           0.072           0.052           0.0413           0.087           0.179           0.735	CPXV-like1 0.052 0.031 0.036 0.040 0.055 0.051 0.047 0.085 0.178 0.733	0.437 CPXV-like2 0.051 0.055 0.059 0.061 0.066 0.066 0.066 0.066 0.096 0.189 0.745	VARV-like VARV-like 0.016 0.020 0.048 0.054 0.050 0.027 0.084 0.177 0.733	0.012 0.012 0.012 0.053 0.048 0.054 0.054 0.019 0.089 0.181 0.737 BI tree of 8	0.057 87 OPXV wł CMLV 0.057 0.052 0.062 0.058 0.023 0.093 0.185 0.741	0.06 genomes ABATINO 0.067 0.030 0.046 0.064 0.088 0.180 0.736 0.736 0.736 0.630 0.736 0.736 0.736 0.736 0.736 0.736 0.736 0.737 0.7388 0.7388 0.7388 0.7388 0.7388 0.7388 0	0.020 S MPXV 0.072 0.068 0.059 0.103 0.195 0.751	0.052 0.052 0.070 0.093 0.185 0.741	0.424 IV-Abatino- 0.065 0.089 0.181 0.737	0.100 0.100 0.192 0.748	AKMV AKMV 0.161 0.717	0.733 AKPV 0.740	New World
New World VACV VACV-like CPXV-like1 CPXV-like1 CPXV-like2 VARV-like TATV CMLV ABATINO MPXV ECTV ECTV-Abatino-like VARV AKMV AKPV New World	VACV 0.026 0.043 0.063 0.037 0.041 0.045 0.060 0.039 0.066 0.062 0.052 0.096 0.188 0.744 VACV	VACV-like 0.034 0.053 0.027 0.031 0.036 0.051 0.072 0.056 0.052 0.043 0.087 0.179 0.735 VACV-like	CPXV-like1 0.052 0.031 0.036 0.040 0.040 0.050 0.055 0.055 0.047 0.085 0.178 0.733 CPXV-like1	0.437 CPXV-like2 0.051 0.055 0.059 0.061 0.066 0.066 0.066 0.066 0.066 0.096 0.189 0.745 CPXV-like2	VARV-like VARV-like 0.016 0.020 0.048 0.043 0.054 0.054 0.057 0.084 0.177 0.733 VARV-like VARV-like	0.012 0.012 0.053 0.048 0.058 0.058 0.019 0.089 0.181 0.737 BI tree of 8 TATV	0.057 CMLV 0.057 0.052 0.052 0.052 0.052 0.052 0.053 0.023 0.023 0.093 0.185 0.741 7 OPXV wh	ABATINO 0.067 0.067 0.030 0.046 0.064 0.088 0.180 0.766 0.880 0.780 0.766 0.880 0.780 0.766 0.880 0.780	0.920 MPXV 0.072 0.068 0.059 0.103 0.195 0.751 MPXV	ECTV 0.052 0.070 0.093 0.185 0.741 ECTV	V-Abatino-	0.100 0.100 0.192 0.748	AKMV AKMV 0.161 0.717 AKMV	AKPV	New World
New World VACV VACV-like CPXV-like1 CPXV-like2 VARV-like TATV CMLV ABATINO MPXV ECTV ECTV ECTV ARV AKMV AKMV New World VACV	VACV 0.026 0.043 0.063 0.037 0.041 0.045 0.060 0.039 0.066 0.052 0.096 0.052 0.096 0.188 0.744 VACV	VACV-like 0.034 0.053 0.027 0.036 0.051 0.072 0.056 0.052 0.043 0.087 0.179 0.735 VACV-like	CPXV-like1 0.052 0.031 0.036 0.040 0.040 0.055 0.055 0.051 0.047 0.085 0.178 0.733 CPXV-like1	0.437 CPXV-like2 0.051 0.055 0.059 0.061 0.066 0.066 0.066 0.066 0.066 0.096 0.189 0.745 CPXV-like2	VARV-like VARV-like 0.016 0.020 0.048 0.043 0.054 0.027 0.084 0.177 0.733 VARV-like	0.012 0.012 0.053 0.048 0.058 0.054 0.019 0.089 0.181 0.737 BI tree of 8 TATV	0.057 CMLV 0.057 0.057 0.052 0.062 0.023 0.093 0.185 0.741 7 OPXV wh CMLV	able         able           ABATINO         able           0.067         0.067           0.064         0.064           0.064         0.068           0.180         0.736           ABATINO         able	0.420 MPXV 0.072 0.072 0.069 0.103 0.195 0.751 MPXV	ECTV 0.052 0.070 0.093 0.185 0.741 ECTV	0.424 IV-Abatino- 0.065 0.089 0.181 0.737 IV-Abatino-	VARV 0.100 0.192 0.748 VARV	AKMV AKMV 0.161 0.161 0.717 AKMV	0.740 0.740	New World
New World VACV VACV-like CPXV-like 1 CPXV-like 2 VARV-like TATV CMLV ABATINO MPXV ECTV ECTV-Abatino-like VARV AKHV AKHV New World VACV VACV	VACV 0.026 0.043 0.037 0.041 0.045 0.060 0.036 0.066 0.062 0.052 0.096 0.188 0.744 VACV	VACV-like 0.034 0.053 0.027 0.031 0.036 0.051 0.072 0.036 0.052 0.043 0.087 0.179 0.735 VACV-like	CPXV-like1 0.052 0.031 0.036 0.040 0.049 0.055 0.051 0.047 0.085 0.178 0.733 CPXV-like1	0.437 CPXV-like2 0.051 0.055 0.059 0.061 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.096 0.189 0.745 CPXV-like2	0.420 VARV-like 0.016 0.020 0.048 0.054 0.054 0.054 0.054 0.050 0.027 0.084 0.177 0.733	0.0012 0.012 0.053 0.048 0.054 0.054 0.054 0.019 0.089 0.181 0.737 BI tree of 8 TATV	0.057 7 OPXV wł CMLV 0.057 0.052 0.062 0.058 0.023 0.093 0.185 0.741 7 OPXV wł CMLV	0.067 0.030 0.067 0.030 0.046 0.064 0.068 0.180 0.736 0.736 0e genomes ABATINO	0.072 MPXV 0.072 0.068 0.059 0.103 0.195 0.751 MPXV	0.052 0.052 0.070 0.093 0.185 0.741 ECTV	V-Abatino-	0.100 0.100 0.192 0.748 VARV	AKMV AKMV 0.161 0.161 0.717 AKMV	0.733 AKPV 0.740	New World
New World VACV VACV-like CPXV-like1 CPXV-like1 CPXV-like2 VARV-like TATV CMLV ABATINO MPXV ECTV ECTV ECTV-Abatino-like VARV AKMV AKPV New World VACV VACV VACV-like	VACV 0.026 0.043 0.063 0.037 0.041 0.045 0.060 0.039 0.066 0.062 0.052 0.096 0.188 0.744 VACV 0.026	VACV-like 0.034 0.053 0.027 0.031 0.036 0.051 0.072 0.056 0.052 0.043 0.087 0.179 0.735 VACV-like	CPXV-like1 0.052 0.031 0.036 0.040 0.049 0.050 0.055 0.047 0.085 0.178 0.733 CPXV-like1	0.437 CPXV-like2 0.051 0.055 0.059 0.061 0.066 0.066 0.066 0.096 0.189 0.745 CPXV-like2	VARV-like 0.016 0.020 0.048 0.054 0.050 0.050 0.027 0.084 0.177 0.733 VARV-like	0.012 0.012 0.053 0.054 0.054 0.054 0.054 0.019 0.089 0.181 0.737 BI tree of 8 TATV	0.057 <b>CMLV</b> <b>CMLV</b> 0.057 0.052 0.052 0.058 0.023 0.093 0.185 0.741 <b>7 OPXV wh</b>	0.06 genome: ABATINO 0.067 0.030 0.046 0.064 0.088 0.180 0.736 0le genome: ABATINO	0.920 MPXV 0.072 0.068 0.059 0.103 0.195 0.751 MPXV	0.052 0.052 0.070 0.093 0.185 0.741 ECTV	V-Abatino-	0.100 0.100 0.192 0.748 VARV	AKMV AKMV 0.161 0.161 0.717 AKMV	0.733 AKPV 0.740 AKPV	New World
New World VACV VACV-like CPXV-like 1 CPXV-like 2 VARV-like TATV CMLV ABATINO MPXV ECTV ECTV ECTV ECTV AKMV AKMV AKMV AKMV VARV VACV VACV VACV-like CPXV-like 1	0.427           VACV           0.026           0.043           0.063           0.037           0.041           0.042           0.043           0.041           0.043           0.041           0.041           0.041           0.041           0.045           0.060           0.039           0.066           0.052           0.096           0.188           0.744           VACV           0.026           0.043	VACV-like 0.034 0.053 0.027 0.036 0.051 0.072 0.056 0.052 0.043 0.087 0.179 0.735 VACV-like 0.033	CPXV-like1 0.052 0.031 0.036 0.040 0.040 0.055 0.055 0.055 0.047 0.085 0.178 0.733 CPXV-like1	0.437 CPXV-like2 0.051 0.055 0.059 0.061 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.096 0.096 0.189 0.745 CPXV-like2	0.420 VARV-like 0.016 0.020 0.048 0.054 0.054 0.054 0.027 0.084 0.177 0.733	0.012 0.012 0.053 0.048 0.058 0.054 0.019 0.089 0.181 0.737 BI tree of 8 TATV	0.057 CMLV 0.057 0.057 0.052 0.062 0.023 0.093 0.185 0.741 7 OPXV wh CMLV	0.06 genome: ABATINO 0.067 0.030 0.064 0.064 0.068 0.180 0.736 0.180 0.736 0.180 0.736 0.180 0.736 0.180 0.736 0.180 0.180 0.736 0.180	0.420 s MPXV 0.072 0.068 0.059 0.103 0.195 0.751 MPXV	0.052 0.052 0.070 0.093 0.185 0.741	0.424 IV-Abatino- 0.065 0.089 0.181 0.737 IV-Abatino-	0.100 0.100 0.192 0.748 VARV	AKMV AKMV 0.161 0.161 0.717 AKMV	0.733 AKPV 0.740 AKPV	New World
New World VACV VACV-like CPXV-like1 CPXV-like2 VARV-like TATV CMLV ABATINO MPXV ECTV ECTV-IV ECTV-IV ECTV-Abatino-like VARV AKMV AKMV New World VACV VACV-like1 CPXV-like1 CPXV-like2	VACV VACV 0.026 0.043 0.037 0.041 0.045 0.060 0.039 0.066 0.062 0.052 0.096 0.188 0.744 VACV 0.026 0.043 0.069	VACV-like 0.034 0.053 0.027 0.031 0.036 0.051 0.072 0.036 0.052 0.043 0.087 0.179 0.735 VACV-like 0.033 0.053	CPXV-like1 0.052 0.031 0.036 0.040 0.049 0.055 0.051 0.047 0.085 0.178 0.733 CPXV-like1 0.058	0.437 CPXV-like2 0.051 0.055 0.059 0.061 0.066 0.066 0.066 0.066 0.066 0.066 0.096 0.189 0.745 CPXV-like2	0.420 VARV-like 0.016 0.020 0.048 0.054 0.054 0.054 0.050 0.027 0.084 0.177 0.733 VARV-like	0.012 0.012 0.053 0.048 0.054 0.054 0.054 0.054 0.019 0.089 0.181 Irre of 8 TATV	0.057 7 OPXV wł CMLV 0.057 0.052 0.062 0.058 0.023 0.093 0.185 0.741 7 OPXV wł CMLV	0.067 0.030 0.046 0.067 0.030 0.046 0.064 0.068 0.180 0.736 0.736 0.736 0.736 0.736	0.072 0.072 0.072 0.068 0.059 0.103 0.195 0.751 MPXV	0.052 0.052 0.070 0.093 0.185 0.741 ECTV	V-Abatino-	0.100 0.100 0.192 0.748 VARV	AKMV AKMV 0.161 0.161 0.717 AKMV	0.733 AKPV 0.740	New World
New World VACV VACV-like CPXV-like1 CPXV-like1 CPXV-like1 CPXV-like TATV CMLV ABATINO MPXV ECTV ECTV ECTV ECTV ECTV ECTV ECTV AKMV AKPV New World VACV VACV-like CPXV-like1 CPXV-like1	VACV 0.026 0.043 0.063 0.037 0.041 0.045 0.060 0.039 0.066 0.062 0.052 0.096 0.188 0.744 VACV VACV 0.026 0.026 0.039 0.062 0.025 0.096 0.026 0.052 0.096 0.026 0.026 0.062 0.062 0.062 0.096 0.062 0.062 0.096 0.062 0.062 0.062 0.096 0.062 0.066 0.062 0.066 0.062 0.066 0.062 0.066 0.062 0.066 0.062 0.066 0.062 0.066 0.062 0.066 0.062 0.066 0.062 0.066 0.062 0.066 0.062 0.066 0	VACV-like 0.034 0.053 0.027 0.031 0.036 0.051 0.072 0.052 0.043 0.087 0.179 0.735 VACV-like 0.033 0.053 0.027	CPXV-like1 0.052 0.031 0.036 0.040 0.049 0.050 0.051 0.047 0.085 0.178 0.733 CPXV-like1 0.058 0.031	0.437 CPXV-like2 0.051 0.055 0.059 0.061 0.066 0.066 0.066 0.066 0.096 0.189 0.745 CPXV-like2 CPXV-like2	VARV-like VARV-like 0.016 0.020 0.048 0.043 0.050 0.027 0.084 0.177 0.733 VARV-like VARV-like	0.012 0.012 0.053 0.048 0.054 0.054 0.019 0.089 0.181 0.781 BI tree of 8 TATV	0.057 CMLV wh CMLV 0.057 0.052 0.062 0.058 0.023 0.093 0.185 0.741 CMLV	0.06 genome: ABATINO 0.067 0.030 0.046 0.064 0.088 0.180 0.736 0.80 0.736 0.80 0.736 0.80 0.736	0.020 S MPXV 0.072 0.068 0.059 0.103 0.195 0.751 MPXV	0.052 0.052 0.070 0.093 0.185 0.741 ECTV	V-Abatino-	0.100 0.100 0.192 0.748 VARV	AKMV AKMV 0.161 0.161 0.717 AKMV	0.733 AKPV 0.740 AKPV	New World
New World VACV VACV-Iike CPXV-Iike 1 CPXV-Iike 2 VARV-Iike TATV CMLV ABATINO MPXV ECTV ECTV-Abatino-Iike VARV AKMV AKMV AKMV New World VACV VACV VACV-Iike CPXV-Iike 1 CPXV-Iike 2 VARV-Iike 2 VARV-Iike 1 CPXV-Iike 1 CPXV-II	VACV 0.026 0.043 0.063 0.041 0.045 0.060 0.039 0.066 0.052 0.096 0.188 0.744 VACV 0.026 0.043 0.026 0.043 0.026 0.043 0.026 0.044 0.026 0.044 0.026 0.044 0.026 0.044 0.026 0.044 0.027 0.026 0.044 0.027 0.026 0.044 0.045 0.045 0.045 0.066 0.052 0.096 0.052 0.096 0.052 0.096 0.052 0.096 0.052 0.026 0.052 0.096 0.052 0.026 0.052 0.026 0.052 0.026 0.052 0.026 0.052 0.026 0.026 0.052 0.026 0.052 0.026 0.052 0.026 0.052 0.026 0.026 0.052 0.043 0.066 0.043 0.066 0.043 0.066 0.044 0.044 0.052 0.044 0.052 0.044 0.052 0.044 0.066 0.044 0.052 0.044 0.04	VACV-like 0.034 0.053 0.027 0.031 0.036 0.051 0.072 0.056 0.052 0.043 0.087 0.179 0.735 VACV-like 0.033 0.053 0.023	CPXV-like1 0.052 0.031 0.036 0.040 0.040 0.050 0.055 0.051 0.047 0.085 0.178 0.733 CPXV-like1 0.058 0.051 0.055 0.051 0.055 0.051 0.055 0.051 0.055 0.05	0.437 CPXV-like2 0.051 0.055 0.059 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.055 CPXV-like2 CPXV-like2 0.055 0.059 0.055 0.059 0.055 0.059 0.055 0.059 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.065 0.055 0.059 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.055 0.059 0.055 0.059 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.055 0.059 0.055 0.059 0.066 0.066 0.066 0.066 0.055 0.059 0.055 0.059 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.055 0.059 0.055 0.059 0.056 0.056 0.066 0.066 0.066 0.066 0.056 0.055 0.055 0.056 0.055 0	0.016 0.016 0.020 0.048 0.054 0.054 0.054 0.054 0.027 0.084 0.177 0.733 VARV-like	0.012 0.012 0.053 0.048 0.058 0.058 0.058 0.019 0.089 0.181 0.737 BI tree of 8 TATV	0.057 CMLV 0.057 0.057 0.052 0.052 0.058 0.023 0.093 0.185 0.741 7 OPXV wh CMLV	ABATINO 0.067 0.067 0.067 0.030 0.064 0.064 0.088 0.180 0.736 Dele genomes ABATINO	0.420 s MPXV 0.072 0.068 0.059 0.103 0.195 0.751 MPXV	0.052 0.052 0.070 0.093 0.185 0.741 ECTV	0.424  IV-Abatino-  0.065 0.089 0.181 0.737  IV-Abatino-  IV-Abatino-  IV-Abatino-  IV-Abatino-  IV-Abatino- IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	0.100 0.100 0.192 0.748 VARV	AKMV AKMV 0.161 0.161 0.717 AKMV	0.733 AKPV 0.740 AKPV	New World
New World VACV VACV-Iike CPXV-like1 CPXV-like2 VARV-like2 VARV-Iike CMLV ABATINO MPXV ECTV ECTV-Abatino-like VARV AKMV AKPV New World CPXV-like CPXV-like1 CPXV-like2 VARV-like TATV CPXV-like TATV CPXV-like	VACV 0.026 0.043 0.063 0.037 0.041 0.045 0.060 0.039 0.066 0.062 0.096 0.188 0.744 VACV VACV 0.026 0.043 0.069 0.036 0.041 0.041 0.041	VACV-like 0.034 0.053 0.027 0.031 0.036 0.051 0.072 0.056 0.052 0.043 0.087 0.179 0.735 VACV-like 0.033 0.053 0.027 0.031 0.027 0.023 0.02 0.02 0.02 0.02 0.02 0.02 0.0	CPXV-like1 0.052 0.031 0.036 0.040 0.040 0.055 0.051 0.047 0.085 0.178 0.733 CPXV-like1 0.058 0.031 0.058 0.05 0.05 0.05 0.05 0.05 0.05 0.0	0.437 CPXV-like2 0.051 0.055 0.059 0.061 0.066 0.066 0.066 0.066 0.066 0.066 0.066 CPXV-like2 CPXV-like2	VARV-like 0.016 0.020 0.048 0.054 0.050 0.027 0.084 0.177 0.733 VARV-like VARV-like 0.016 0.016 0.016 0.020	0.012 0.012 0.053 0.048 0.058 0.054 0.058 0.054 0.019 0.089 0.181 0.737 BI tree of 8 TATV	0.057 0.057 0.057 0.052 0.062 0.058 0.023 0.093 0.741 7 OPXV wh CMLV	0.067 0.030 0.067 0.030 0.046 0.064 0.088 0.180 0.736 ole genomes ABATINO	0.072 0.072 0.072 0.068 0.059 0.103 0.195 0.751 MPXV	0.052 0.052 0.070 0.093 0.185 0.741 ECTV	V-Abatino-	0.100 0.192 0.748 VARV	0.161 0.161 0.717 AKMV	0.733 AKPV 0.740 AKPV	New World
New World VACV VACV-like CPXV-like1 CPXV-like1 CPXV-like1 CPXV-like TATV CMLV ABATINO MPXV ECTV ECTV ECTV ECTV ECTV ECTV ECTV AKMV AKPV New World VACV VACV-like CPXV-like1 CPXV-like1 CPXV-like TATV CMLV	VACV 0.026 0.043 0.063 0.037 0.041 0.045 0.060 0.039 0.066 0.062 0.052 0.096 0.188 0.744 VACV VACV 0.026 0.026 0.041 0.062 0.052 0.096 0.026 0.043 0.066 0.041 0.062 0.052 0.096 0.026 0.096 0.062 0.096 0.026 0.096 0.062 0.096 0.062 0.096 0.062 0.096 0.062 0.096 0.062 0.096 0.062 0.096 0.062 0.096 0.062 0.096 0.062 0.096 0.062 0.096 0.062 0.096 0.062 0.096 0.062 0.096 0.088 0.069 0.036 0.041 0.043 0.044 0.044 0.045 0.044 0.065 0.043 0.065 0.043 0.065 0.041 0.035 0.041 0.035 0.041 0.045 0.041 0.045 0	VACV-like 0.034 0.053 0.027 0.031 0.036 0.051 0.072 0.035 0.052 0.043 0.087 0.179 0.735 VACV-like 0.033 0.033 0.027 0.031 0.035	CPXV-like 1 0.052 0.031 0.036 0.040 0.049 0.055 0.051 0.047 0.085 0.178 0.733 CPXV-like 1 0.058 0.031 0.035 0.040	0.437 CPXV-like2 0.051 0.055 0.059 0.061 0.066 0.066 0.066 0.066 0.096 0.189 0.745 CPXV-like2 CPXV-like2 0.055 0	VARV-like VARV-like 0.016 0.020 0.048 0.043 0.050 0.027 0.084 0.177 0.733 VARV-like VARV-like 0.050 0.021 0.016 0.020	0.012 0.012 0.053 0.054 0.054 0.054 0.054 0.019 0.089 0.181 0.737 TATV 0.012 0.012	0.057 CMLV wh CMLV 0.057 0.052 0.062 0.058 0.023 0.093 0.185 0.741 CMLV CMLV	0.06 genome: ABATINO 0.067 0.030 0.046 0.064 0.088 0.180 0.736 le genome: ABATINO	0.020 S MPXV 0.072 0.068 0.059 0.103 0.195 0.751 MPXV 1.102 1	0.052 0.052 0.070 0.093 0.185 0.741 ECTV	V-Abatino-	0.100 0.192 0.748 VARV	AKMV AKMV 0.161 0.161 0.717 AKMV	0.733 AKPV 0.740 AKPV	New World
New World VACV VACV-Iike CPXV-Iike1 CPXV-Iike2 VARV-Iike TATV CMLV ABATINO MPXV ECTV ECTV-Abatino-Iike VARV AKMV AKMV AKPV New World VACV VACV VACV-Iike CPXV-Iike1 CPXV-Iike1 CPXV-Iike2 VARV-Iike2 VARV-Iike2 VARV AKTV CMLV ABATINO	VACV 0.026 0.043 0.063 0.037 0.041 0.045 0.060 0.039 0.066 0.062 0.052 0.096 0.188 0.744 VACV 0.026 0.041 0.045 0.069 0.036 0.041	VACV-like 0.034 0.053 0.027 0.031 0.036 0.051 0.072 0.056 0.052 0.043 0.087 0.179 0.735 VACV-like 0.033 0.053 0.027 0.031 0.035 0.050	CPXV-like1 0.052 0.031 0.036 0.040 0.040 0.050 0.055 0.051 0.051 0.047 0.085 0.178 0.733 CPXV-like1 0.058 0.031 0.035 0.031 0.035 0.040 0.040 0.049 0.040 0.049 0.040 0.049 0.04 0.04	0.437 CPXV-like2 0.051 0.055 0.059 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.0745 CPXV-like2 CPXV-like2 CPXV-like3 C	VARV-like VARV-like 0.016 0.020 0.048 0.043 0.054 0.054 0.057 0.084 0.177 0.733 VARV-like VARV-like 0.016 0.020 0.048	0.012 0.012 0.053 0.048 0.058 0.058 0.019 0.089 0.181 0.737 BI tree of 8 TATV 0.012 0.022 0.052	0.054 <b>37 OPXV wh</b> <b>CMLV</b> 0.057 0.052 0.052 0.058 0.023 0.093 0.185 0.741 <b>7 OPXV wh</b> <b>CMLV</b> 0.056	ABATINO 0.067 0.067 0.067 0.064 0.064 0.088 0.180 0.736 ole genomes ABATINO	0.420 s MPXV 0.072 0.068 0.059 0.103 0.195 0.751 MPXV	0.052 0.052 0.070 0.093 0.185 0.741 ECTV	0.424  IV-Abatino-  0.065 0.089 0.181 0.737  IV-Abatino-  IV-Abatino-  IV-Abatino- IV-IV-IV-IV-IV-IV-IV-IV-IV-IV-IV-IV-IV-I	0.100 0.100 0.192 0.748 VARV	AKMV AKMV 0.161 0.161 0.717 AKMV	0.733 AKPV 0.740 AKPV	New World
New World VACV VACV-like CPXV-like1 CPXV-like2 VARV-like TATV CMLV ABATINO MPXV ECTV ECTV ECTV ECTV AKMV AKMV AKMV AKMV VACV-like CPXV-like1 CPXV-like1 CPXV-like2 VARV-like1 TATV CMLV ABATINO MPXV	0.427           VACV           0.026           0.043           0.063           0.037           0.041           0.045           0.060           0.039           0.066           0.052           0.096           0.096           0.096           0.096           0.096           0.096           0.096           0.026           0.026           0.036           0.041           0.045           0.060	VACV-like 0.034 0.053 0.027 0.036 0.051 0.072 0.056 0.052 0.041 0.087 0.179 0.735 VACV-like 0.033 0.053 0.027 0.031 0.035 0.035 0.032	CPXV-like1 0.052 0.031 0.036 0.040 0.040 0.055 0.051 0.047 0.085 0.178 0.733 CPXV-like1 0.058 0.031 0.035 0.031 0.035 0.040 0.049 0.04 0.04	0.437 CPXV-like2 0.051 0.055 0.059 0.061 0.066 0.066 0.066 0.066 0.066 0.066 0.096 0.189 0.745 CPXV-like2 CPXV-like2 0.055 0.059 0.055 0.055 0.059 0.055 0.055 0.059 0.055 0.055 0.059 0.066 0.066 0.066 0.055 0.055 0.059 0.066 0.066 0.066 0.065 0.056 0.066 0.065 0.056 0.056 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.055 0.059 0.066 0.066 0.066 0.066 0.066 0.066 0.055 0.059 0.055 0.059 0.056 0.055 0.059 0.066 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.056 0.066 0.066 0.055 0.055 0.055 0.059 0.066 0.066 0.055 0.055 0.059 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.066 0.066 0.066 0.066 0.066 0.066 0.055 0.056 0.066 0	VARV-like 0.016 0.020 0.043 0.054 0.050 0.027 0.084 0.050 0.027 0.084 0.177 0.084 0.177 0.084 0.177 0.084 0.177 0.084 0.073 0.054 0.0043 0.0043	0.012 0.012 0.053 0.054 0.058 0.054 0.019 0.089 0.181 0.737 BI tree of 8 TATV 0.012 0.012 0.025 0.024	0.054 <b>STOPXV wit</b> <b>CMLV</b> 0.057 0.052 0.062 0.023 0.093 0.185 0.741 <b>7 OPXV wh</b> <b>CMLV</b> 0.056 0.056 0.051	0.066 genomeso ABATINO 0.067 0.030 0.046 0.064 0.064 0.088 0.180 0.736 old genomes ABATINO 0.030 0.046 0.030 0.030 0.046 0.030 0.030 0.046 0.030 0.030 0.046 0.030 0.030 0.046 0.030 0.030 0.046 0.030 0.030 0.030 0.030 0.046 0.030 0.03	0.072 0.072 0.072 0.068 0.059 0.103 0.195 0.751 MPXV	0.052 0.070 0.093 0.185 0.741 ECTV	0.424 IV-Abatino- 0.065 0.089 0.181 0.737 IV-Abatino- 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.	0.100 0.100 0.192 0.748 VARV	0.161 0.161 0.717 AKMV	0.733 AKPV 0.740 AKPV	New World
New World VACV VACV-like CPXV-like1 CPXV-like1 CPXV-like1 CPXV-like TATV CMLV ABATINO MPXV ECTV ECTV ECTV ECTV ECTV-batino-like VARV AKMV AKPV New World VACV-like CPXV-like1 CPXV-like1 CPXV-like2 VARV-like TATV CMLV ABATINO MPXV ECTV	VACV 0.026 0.043 0.063 0.037 0.041 0.045 0.060 0.039 0.066 0.062 0.052 0.096 0.188 0.744 VACV VACV 0.026 0.039 0.066 0.041 0.062 0.052 0.096 0.026 0.043 0.066 0.043 0.069 0.036 0.041 0.045 0.069 0.036 0.041 0.045 0.069 0.045 0.066 0.045 0.045 0.065 0.055 0	VACV-like 0.034 0.053 0.027 0.031 0.036 0.051 0.072 0.035 0.052 0.043 0.087 0.179 0.735 VACV-like 0.033 0.053 0.027 0.031 0.035 0.027 0.031 0.035 0.027 0.031 0.035 0.027 0.032 0.050 0.032 0.050 0.032 0.050 0.032 0.050 0.032 0.050 0.032 0.050 0.032 0.050 0.032 0.050 0.032 0.050 0.032 0.050 0.032 0.050 0.032 0.055 0.052 0.05 0.05	CPXV-like1 0.052 0.031 0.036 0.040 0.049 0.050 0.051 0.047 0.085 0.051 0.047 0.085 0.178 0.733 CPXV-like1 CPXV-like1 0.058 0.031 0.035 0.040 0.049 0.049 0.049 0.054	0.437 CPXV-like2 0.051 0.055 0.059 0.061 0.066 0.066 0.066 0.066 0.096 0.189 0.745 CPXV-like2 CPXV-like2 0.055 0.055 0.059 0.060 0.055 0.059	VARV-like 0.016 0.020 0.048 0.043 0.043 0.050 0.027 0.084 0.177 0.733 VARV-like 0.016 0.020 0.016 0.020 0.048 0.043 0.05 0.05	0.012 0.012 0.012 0.053 0.048 0.054 0.054 0.054 0.054 0.054 0.058 BI tree of 8 TATV 0.012 0.012 0.052 0.047 0.052 0.058	0.057 0.057 0.057 0.052 0.062 0.058 0.023 0.093 0.185 0.741 CMLV CMLV 0.055 0.055 0.055 0.055 0.0551 0.0551 0.055	0.066 0.030 0.046 0.030 0.046 0.064 0.088 0.180 0.046 0.088 0.180 0.064 0.088 0.180 0.066 0.030	0.020 S MPXV 0.072 0.068 0.059 0.103 0.195 0.751 MPXV 0.751 0.072 0.0672	0.052 0.052 0.070 0.093 0.185 0.741 ECTV	V-Abatino-	0.100 0.192 0.748 VARV	AKMV AKMV 0.161 0.161 0.717 AKMV	0.733 AKPV 0.740 AKPV	New World
New World VACV VACV-Iike CPXV-like1 CPXV-like2 VARV-like TATV CMLV ABATINO MPXV ECTV ECTV-Abatino-like VARV AKMV AKPV New World VACV VACV VACV-Iike1 CPXV-like1 CPXV-like2 VARV-Iike1 TATV CMLV ABATINO MPXV ECTV ABATINO MPXV ECTV	VACV 0.026 0.043 0.063 0.041 0.045 0.060 0.039 0.066 0.062 0.052 0.096 0.188 0.744 VACV 0.026 0.043 0.069 0.036 0.041 0.045 0.060 0.039 0.061	VACV-like 0.034 0.053 0.027 0.031 0.036 0.051 0.072 0.056 0.052 0.043 0.087 0.179 0.735 VACV-like 0.033 0.053 0.027 0.035 0.027 0.035 0.027 0.035 0.050 0.032 0.050 0.032 0.050 0.052 0.05 0.05	CPXV-like1 0.052 0.031 0.036 0.040 0.040 0.050 0.055 0.055 0.055 0.047 0.085 0.178 0.733 CPXV-like1 0.058 0.031 0.035 0.031 0.035 0.040 0.049 0.049 0.049 0.049 0.054 0.055 0.05 0.055 0.0	0.437 CPXV-like2 0.051 0.055 0.059 0.061 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.065 0.055 0.055 0.055 0.055 0.055 0.059 0.066 0.066 0.055 0.055 0.059 0.066 0.066 0.055 0.055 0.059 0.066 0.066 0.066 0.066 0.066 0.055 0.055 0.059 0.066 0.066 0.066 0.066 0.055 0.059 0.066 0.066 0.066 0.066 0.066 0.066 0.055 0.055 0.059 0.066 0.066 0.066 0.066 0.055 0.055 0.055 0.059 0.066 0.066 0.066 0.066 0.055 0.055 0.059 0.066 0.066 0.055 0.055 0.055 0.059 0.066 0.066 0.066 0.066 0.055 0.055 0.055 0.059 0.066 0.066 0.066 0.055 0.055 0.055 0.059 0.066 0.066 0.066 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.066 0.066 0.066 0.066 0.055 0.055 0.055 0.055 0.059 0.066 0.066 0.065 0.055 0.055 0.059 0.066 0.055 0.055 0.059 0.066 0.066 0.055 0.055 0.059 0.066 0.066 0.055 0.059 0.066 0.066 0.066 0.055 0.059 0.066 0.066 0.066 0.055 0.059 0.066 0.066 0.066 0.066 0.055 0.059 0.066 0.066 0.066 0.066 0.055 0.059 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.055 0.059 0.066 0.06	VARV-like VARV-like 0.016 0.020 0.048 0.043 0.054 0.050 0.027 0.084 0.177 0.733 VARV-like VARV-like 0.016 0.020 0.048 0.043 0.043 0.043 0.043 0.043 0.043 0.044 0.	0.012 0.012 0.053 0.054 0.058 0.058 0.058 0.058 0.058 0.058 0.058 0.019 0.089 0.181 0.737 BI tree of 8 TATV	0.054 <b>S7 OPXV wh</b> <b>CMLV</b> 0.057 0.052 0.052 0.052 0.053 0.023 0.093 0.185 0.741 <b>7 OPXV wh</b> <b>CMLV</b> 0.056 0.051 0.056 0.051 0.059	ABATINO ABATINO 0.067 0.030 0.046 0.064 0.088 0.180 0.736 00 Benness ABATINO 0.066 0.030 0.046	0.920 S MPXV 0.072 0.068 0.059 0.103 0.195 0.751 MPXV 0.075 0.0751 0.0751 0.0751 0.0751 0.0751 0.0752 0.068 0.0752 0.068 0.0752 0.068 0.0752 0.068 0.0752 0.068 0.0752 0.07	0.052 0.052 0.070 0.093 0.185 0.741 ECTV	V-Abatino-	0.100 0.100 0.192 0.748 VARV	AKMV AKMV 0.161 0.161 0.717 AKMV	0.733 AKPV 0.740 AKPV	New World
New World VACV VACV-like CPXV-like 1 CPXV-like 2 VARV-like TATV CMLV ABATINO MPXV ECTV ECTV ECTV-Abatino-like VARV AKMV AKMV AKMV AKMV VACV-like CPXV-like CPXV-like CPXV-like CPXV-like TATV CMLV ABATINO MPXV ECTV-Abatino-like VACV VACV-VV VACV-like CPXV-like CPXV-li	VACV           0.026           0.043           0.063           0.037           0.041           0.045           0.060           0.039           0.066           0.052           0.096           0.188           0.744           VACV           0.026           0.043           0.026           0.036           0.036           0.041           0.045           0.065           0.065	VACV-like 0.034 0.053 0.027 0.036 0.051 0.072 0.056 0.052 0.041 0.087 0.179 0.735 VACV-like 0.033 0.053 0.027 0.031 0.035 0.005 0.032 0.056 0.032 0.056 0.032 0.056 0.032 0.056 0.032 0.056 0.032 0.056 0.032 0.056 0.032 0.056 0.032 0.056 0.032 0.056 0.052 0.056 0.052 0.055 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05	CPXV-like1 0.052 0.031 0.036 0.040 0.040 0.055 0.051 0.051 0.047 0.085 0.178 0.733 CPXV-like1 0.058 0.031 0.035 0.031 0.035 0.049 0.049 0.049 0.049 0.049 0.049 0.054 0.055 0.051 0.051 0.054 0.054 0.055 0.051 0.054 0.055 0.051 0.054 0.055 0.051 0.054 0.055 0.055 0.051 0.054 0.055 0.05 0.05 0.05 0.05 0.05 0	0.437 CPXV-like2 0.051 0.055 0.059 0.061 0.066 0.066 0.066 0.066 0.066 0.066 0.096 0.189 0.745 CPXV-like2 CPXV	VARV-like 0.016 0.020 0.048 0.054 0.050 0.027 0.084 0.053 0.054 VARV-like 0.073 0.084 0.177 0.084 0.177 0.084 0.073 0.084 0.073 0.084 0.073 0.084 0.073 0.084 0.073 0.084 0.073 0.084 0.073 0.084 0.073 0.084 0.08 0.08	0.012 0.012 0.053 0.058 0.054 0.058 0.054 0.019 0.089 0.181 0.737 BI tree of 8 TATV 0.012 0.012 0.025 0.025 0.047 0.058 0.054	0.054 <b>37 OPXV wit</b> <b>CMLV</b> 0.057 0.052 0.062 0.023 0.093 0.185 0.741 <b>7 OPXV wh</b> <b>CMLV</b> 0.056 0.051 0.056 0.051 0.062 0.056	0.0067 0.030 0.046 0.067 0.030 0.046 0.064 0.030 0.046 0.736 ble genomes ABATINO 0.736 ble genomes 0.180 0.736 ble genomes 0.030 0.046 0.030 0.046 0.030 0.046 0.030 0.046 0.04 0.04	0.072 0.072 0.072 0.068 0.059 0.103 0.195 0.751 MPXV 0.751 0.072 0.068 0.072 0.068 0.072 0.068 0.072 0.068 0.072 0.068 0.072 0.068 0.072 0.068 0.072 0.068 0.072 0.068 0.072 0.068 0.072 0.068 0.072 0.068 0.075 0.072 0.068 0.075 0.072 0.068 0.075 0.0	0.052 0.070 0.093 0.185 0.741 ECTV	V-Abatino-	0.100 0.100 0.192 0.748 VARV	0.161 0.161 0.717 AKMV	0.733 AKPV 0.740 AKPV	New World
New World VACV VACV-like CPXV-like1 CPXV-like2 VARV-like1 CPXV-like2 CPXV-lik	VACV 0.026 0.043 0.063 0.037 0.041 0.045 0.060 0.039 0.066 0.052 0.096 0.188 0.744 VACV VACV 0.026 0.052 0.096 0.026 0.041 0.062 0.052 0.096 0.036 0.043 0.064 0.026 0.043 0.062 0.052 0.066 0.035 0.066 0.035 0.066 0.055 0.066 0.065 0.066 0.065 0.065 0.065 0.065 0.065 0.055 0.065 0.065 0.065 0.055 0.065 0.065 0.065 0.055 0.065 0.055 0.065 0.065 0.065 0.055 0.065 0.055 0.065 0.055 0.065 0.055 0.065 0.055 0.065 0.055 0.065 0.055 0.065 0.055 0.065 0.055 0.065 0.055 0.065 0.055 0.065 0.055 0.065 0.055 0.065 0.055 0	VACV-like 0.034 0.053 0.027 0.031 0.036 0.051 0.072 0.035 0.052 0.043 0.087 0.179 0.735 VACV-like 0.033 0.053 0.027 0.031 0.035 0.027 0.031 0.035 0.027 0.031 0.035 0.050 0.032 0.052 0.042	CPXV-like1 0.052 0.031 0.036 0.040 0.049 0.050 0.051 0.047 0.085 0.178 0.733 CPXV-like1 CPXV-like1 0.058 0.031 0.035 0.040 0.049 0.049 0.049 0.049 0.049 0.050 0.051 0.047 0.050 0.047	0.437 CPXV-like2 0.051 0.055 0.059 0.061 0.066 0.066 0.066 0.096 0.189 0.745 CPXV-like2 CPXV-like2 0.055 0.055 0.059 0.060 0.055 0.059 0.061 0.055 0.059 0.061 0.055 0.059 0.061 0.055 0.055 0.059 0.061 0.065 0.055 0.059 0.066 0.066 0.065 0.055 0.059 0.066 0.066 0.065 0.055 0.059 0.066 0.066 0.066 0.065 0.055 0.059 0.066 0.066 0.066 0.066 0.065 0.055 0.059 0.066 0.066 0.066 0.066 0.066 0.065 0.055 0.059 0.066 0.066 0.066 0.066 0.066 0.066 0.055 0.055 0.059 0.066 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.066 0.066 0.066 0.055 0.055 0.055 0.066 0.066 0.066 0.055 0.055 0.055 0.066 0.066 0.066 0.055 0.055 0.065 0.066 0.066 0.066 0.055 0.066 0.066 0.066 0.065 0.066 0.065 0.066 0.055 0.056 0.066 0	VARV-like  VARV-like  0.016 0.020 0.048 0.053 0.054 0.050 0.027 0.084 0.177 0.084 0.177 0.733 VARV-like  0.016 0.020 0.048 0.043 0.044 0.043 0.043 0.044 0.044 0.043 0.044 0.043 0.044 0.044 0.043 0.044 0.0	0.012 0.012 0.012 0.053 0.048 0.054 0.054 0.054 0.054 0.054 0.019 0.089 0.181 0.737 TATV 0.012 0.052 0.047 0.052 0.054 0.054 0.052 0.054 0.052 0.054 0.055 0.054 0.052 0.054 0.055 0.055 0.055 0.055 0.055 0.012 0.055 0.0	0.057 0.057 0.057 0.052 0.062 0.058 0.023 0.093 0.185 0.741 CMLV CMLV 0.056 0.056 0.055 0.05	0.066 0.030 0.046 0.064 0.030 0.046 0.088 0.180 0.064 0.088 0.180 0.066 0.030 0.046 0.030 0.046 0.030 0.046 0.030	0.020 S MPXV 0.072 0.068 0.059 0.103 0.195 0.751 MPXV MPXV 0.072 0.068 0.059 0.103 0.195 0.751	0.052 0.052 0.070 0.093 0.185 0.741 ECTV	V-Abatino- 0.065 0.065 0.089 0.181 0.737 V-Abatino- V-Abatino- 0.065 0.089 0.181 0.737	VARV VARV 0.100 0.192 0.748 VARV	AKMV AKMV 0.161 0.161 0.717 AKMV	0.733 AKPV 0.740 AKPV	New World
New World VACV VACV-like CPXV-like1 CPXV-like1 CPXV-like2 VARV-like TATV CMLV ABATINO MPXV ECTV ECTV-Abatino-like VARV AKPV New World VACV VACV-like CPXV-like1 CPXV-like1 CPXV-like2 VARV-like2 VARV-like2 CPXV-like2 CPXV-	VACV 0.026 0.043 0.063 0.037 0.064 0.044 0.045 0.066 0.039 0.066 0.052 0.096 0.188 0.744 VACV 0.026 0.043 0.069 0.036 0.041 0.045 0.069 0.039 0.065 0.061 0.039 0.065 0.06 0.05 0.05	0.419           VACV-like           0.034           0.053           0.027           0.036           0.051           0.072           0.056           0.043           0.043           0.043           0.072           0.056           0.043           0.043           0.043           0.031           0.033           0.053           0.027           0.031           0.035           0.050           0.032           0.056           0.052           0.056           0.052           0.056           0.052           0.056           0.052           0.056           0.052	CPXV-like 1  CPXV-like 1  0.052 0.031 0.036 0.040 0.049 0.050 0.055 0.047 0.085 0.178 0.733 CPXV-like 1  CPXV-like 1  0.058 0.031 0.035 0.040 0.049 0.054 0.054 0.047 0.084	0.437 CPXV-like2 0.051 0.055 0.059 0.061 0.066 0.066 0.066 0.096 0.189 0.745 CPXV-like2 CPXV-like2 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.066 0.065 0.055 0.055 0.055 0.055 0.059 0.062 0.066 0.065 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.066 0.066 0.066 0.065 0.055 0.055 0.055 0.055 0.055 0.066 0.066 0.066 0.066 0.066 0.066 0.065 0.055 0.055 0.055 0.055 0.055 0.066 0.066 0.066 0.066 0.066 0.065 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.066 0.066 0.066 0.065 0.066 0.065 0.066 0.066 0.065 0.066 0.065 0.066 0.065 0.066 0.066 0.065 0.065 0.066 0.066 0.065 0.066 0.065 0.066 0.066 0.065 0.066 0.065 0.066 0.066 0.066 0.066 0.066 0.066 0.065 0.066 0.055 0.055 0.055 0.055 0.056 0.056 0.056 0.066 0.066 0.066 0.066 0.065 0.056 0.055 0.056 0.056 0.056 0.055 0.056 0.056 0.055 0.056 0.056 0.055 0.056 0.056 0.056 0.055 0.056 0	VARV-like VARV-like 0.016 0.020 0.048 0.043 0.050 0.027 0.084 0.177 0.733 VARV-like VARV-like 0.016 0.020 0.048 0.043 0.053 0.043 0.053 0.043 0.053 0.043 0.053 0.043	0.012 0.012 0.053 0.054 0.054 0.054 0.054 0.054 0.054 0.054 0.019 0.089 0.181 0.737 BI tree of 8 TATV 0.052 0.047 0.052 0.047 0.058 0.054	0.054 <b>STOPXV wh</b> <b>CMLV</b> 0.057 0.052 0.058 0.023 0.093 0.185 0.741 <b>TOPXV wh</b> <b>CMLV</b> 0.056 0.051 0.056 0.051 0.052 0.052 0.052 0.051 0.052 0.052 0.055 0.051 0.052 0.055 0.0	ABATINO 0.067 0.067 0.030 0.046 0.030 0.046 0.088 0.180 0.736 0e genomes ABATINO 0.066 0.030 0.066 0.030 0.046 0.066 0.030 0.046 0.066 0.030 0.046 0.030 0.046 0.066 0.030 0.046 0.030 0.046 0.066 0.030 0.046 0.066 0.030 0.046 0.030 0.046 0.046 0.066 0.046 0.030 0.046 0.030 0.046 0.030 0.046 0.030 0.046 0.030 0.046 0.030 0.046 0.030 0.046 0.030 0.046 0.030 0.046 0.046 0.066 0.030 0.046 0.066 0.030 0.046 0.066 0.030 0.046 0.066 0.086 0	0.020 S MPXV 0.072 0.068 0.059 0.103 0.195 0.751 MPXV 0.751 0.068 0.059 0.103 0.195 0.751 0.068 0.072 0.068 0.072 0.068 0.058 0.058 0.058 0.102	0.052 0.052 0.070 0.093 0.185 0.741 ECTV ECTV	V-Abatino- V-Abatino- 0.065 0.089 0.181 0.737 V-Abatino- V-Abatino- 0.065 0.088	0.100 0.100 0.192 0.748 VARV	AKMV AKMV 0.161 0.161 0.717 AKMV	0.733 AKPV 0.740 AKPV	New World
New World VACV VACV-Iike CPXV-like 1 CPXV-like 2 VARV-like TATV CMLV ABATINO MPXV ECTV ECTV-Abatino-like VARV AKMV AKPV New World VACV VACV-Iike CPXV-like 1 CPXV-	VACV 0.026 0.043 0.063 0.041 0.045 0.060 0.039 0.066 0.062 0.052 0.096 0.188 0.744 VACV 0.026 0.043 0.069 0.036 0.041 0.045 0.060 0.039 0.065 0.061 0.039 0.065 0.061 0.095 0.185	VACV-like 0.034 0.053 0.027 0.031 0.036 0.051 0.072 0.056 0.043 0.043 0.043 0.043 0.043 0.043 0.043 0.043 0.043 0.043 0.043 0.043 0.043 0.043 0.043 0.043 0.043 0.043 0.043 0.044 0.	CPXV-like1	0.437 CPXV-like2 0.051 0.055 0.059 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.066 0.065 0.055 0.055 0.055 0.055 0.055 0.055 0.050 0.055 0.055 0.050 0.066 0.066 0.066 0.066 0.066 0.066 0.055 0.055 0.055 0.059 0.066 0.055 0.055 0.055 0.055 0.055 0.066 0.066 0.066 0.065 0.066 0.066 0.066 0.065 0.066 0.066 0.066 0.066 0.065 0.066 0.066 0.066 0.066 0.065 0.066 0.06	VARV-like  VARV-like  0.016 0.020 0.048 0.043 0.054 0.054 0.054 0.027 0.084 0.177 0.733 VARV-like  VARV-like 0.016 0.020 0.048 0.043 0.053 0.049 0.027 0.083 0.174	0.012 0.012 0.053 0.048 0.058 0.054 0.019 0.088 0.012 0.089 0.181 0.737 BI tree of 8 TATV 0.012 0.052 0.047 0.052 0.047 0.058 0.054 0.019 0.088 0.054 0.012	0.057 <b>CMLV</b> <b>CMLV</b> 0.057 0.052 0.052 0.058 0.023 0.093 0.185 0.741 <b>7 OPXV wh</b> <b>CMLV</b> 0.056 0.051 0.056 0.051 0.052 0.052 0.052 0.052 0.053 0.053 0.053 0.054 0.055	ABATINO ABATINO ABATINO ABATINO ABATINO ADA ADA ADA ADA ADA ADA ADA ADA ADA AD	0.920 S MPXV 0.072 0.068 0.059 0.103 0.195 0.751 MPXV 0.075 0.068 0.058 0.0058 0.0102 0.102	ECTV ECTV 0.052 0.070 0.093 0.185 0.741 ECTV ECTV	V-Abatino- V-Abatino- 0.065 0.089 0.181 0.737 V-Abatino- V-Abatino- 0.065 0.089 0.181 0.737	0.100 0.100 0.192 0.748 VARV VARV	AKMV AKMV 0.161 0.161 0.717 AKMV 0.158	0.733 AKPV 0.740 AKPV	New World
New World VACV VACV-like CPXV-like1 CPXV-like1 CPXV-like1 CPXV-like1 CPXV-like TATV CMLV ABATINO MPXV ECTV ECTV-Abatino-like VARV AKMV AKPV New World CPXV-like1 CPXV-like2 CPXV	VACV 0.026 0.043 0.063 0.037 0.041 0.045 0.060 0.039 0.066 0.052 0.096 0.188 0.744 VACV VACV 0.026 0.039 0.066 0.039 0.062 0.052 0.096 0.036 0.043 0.060 0.036 0.043 0.060 0.036 0.043 0.060 0.036 0.041 0.060 0.052 0.052 0.060 0.052 0.052 0.060 0.052 0.060 0.052 0.052 0.055 0.060 0.036 0.065 0.060 0.036 0.041 0.060 0.052 0.052 0.060 0.052 0.055 0.060 0.036 0.065 0.060 0.036 0.065 0	VACV-like 0.034 0.053 0.027 0.031 0.036 0.051 0.072 0.031 0.052 0.043 0.087 0.179 0.735 VACV-like 0.033 0.053 0.027 0.031 0.035 0.027 0.031 0.035 0.055 0.052 0.042 0.066 0.176 0.460 0.46	CPXV-like1 0.052 0.031 0.036 0.040 0.049 0.050 0.055 0.051 0.047 0.085 0.178 0.733 CPXV-like1 0.055 0.031 0.035 0.040 0.049 0.054 0.054 0.054 0.054 0.054 0.054 0.054 0.054 0.054 0.054 0.054 0.054 0.054 0.054 0.054 0.054 0.055 0.045 0.055 0.045 0.055 0.045 0.055 0.045 0.055 0.045 0.055 0.045 0.055 0.045 0.055 0.045 0.055 0.045 0.055 0.045 0.055 0.045 0.055 0.045 0.055 0.045 0.055 0.045 0.055 0.045 0.055 0.045 0.055 0.045 0.055 0.045 0.05 0.055 0.05 0.055 0.05	0.437 CPXV-like2 0.051 0.055 0.059 0.061 0.066 0.066 0.096 0.189 0.745 CPXV-like2 CPXV-like2 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.055 0.066 0.066 0.055 0.055 0.055 0.055 0.066 0.066 0.055 0.055 0.055 0.066 0.066 0.055 0.055 0.055 0.066 0.066 0.066 0.055 0.055 0.055 0.066 0.066 0.066 0.066 0.055 0.055 0.055 0.055 0.066 0.066 0.066 0.066 0.055 0.055 0.055 0.055 0.066 0.066 0.066 0.055 0.055 0.055 0.055 0.055 0.066 0.066 0.066 0.066 0.055 0.055 0.055 0.055 0.066 0.066 0.066 0.055 0.066 0.066 0.055 0.055 0.055 0.066 0.066 0.066 0.055 0.055 0.055 0.066 0.066 0.065 0.066 0.066 0.065 0.066 0.065 0.066 0.065 0.066 0.065 0.066 0.065 0.066 0.065 0.066 0.065 0.066 0.065 0.066 0.065 0.066 0.065 0.066 0.065 0.066 0.065 0.066 0.065 0.066 0.065 0.0745 0.066 0.065 0.066 0.0745 0.0747 0.0747 0.066 0.066 0.0747 0.0747 0.0747 0.075 0.066 0.07577 0.07577 0.	VARV-like 0.016 0.020 0.048 0.054 0.050 0.027 0.084 0.073 VARV-like VARV-like 0.016 0.020 0.048 0.073 0.016 0.020 0.048 0.043 0.053 0.049 0.027 0.083 0.174 0.458	0.012 0.012 0.012 0.053 0.048 0.058 0.054 0.054 0.019 0.089 0.181 0.737 BI tree of 8 TATV 0.012 0.052 0.042 0.054 0.012 0.054 0.012 0.054 0.012 0.054 0.012 0.054 0.012 0.055 0.054 0.019 0.089 0.178 0.054 0.054 0.012 0.055 0.054 0.079 0.089 0.172 0.055 0.054 0.073 0.074 0.075 0.074 0.075 0.075 0.074 0.075 0.058 0.058 0.058 0.058 0.058 0.058 0.058 0.058 0.054 0.058 0.058 0.054 0.058 0.054 0.058 0.054 0.058 0.054 0.058 0.054 0.058 0.054 0.058 0.054 0.058 0.054 0.058 0.054 0.058 0.054 0.058 0.054 0.058 0.054 0.058 0.054 0.054 0.058 0.054 0.056 0.054 0.056 0.054 0.056 0.054 0.056 0.054 0.056 0.056 0.054 0.057 0.056 0.054 0.056 0.056 0.054 0.056 0.0	0.057 7 OPXV wł CMLV 0.057 0.052 0.062 0.058 0.023 0.093 0.185 0.741 CMLV CMLV 0.056 0.056 0.055 0.055 0.055 0.055 0.053 0.093 0.185 0.055 0	ABATINO 0.067 0.030 0.046 0.064 0.064 0.088 0.180 0.730 0.730 0.730 0.750	0.072 0.072 0.072 0.068 0.059 0.103 0.195 0.751 MPXV MPXV 0.072 0.068 0.059 0.103 0.195 0.751 0.068 0.059 0.103 0.195 0.072 0.068 0.059 0.103 0.195 0.103 0.195 0.103 0.195 0.103 0.195 0.103 0.195 0.103 0.195 0.195 0.103 0.195 0.058 0.059 0.057 0.068 0.059 0.103 0.195 0.057 0.068 0.057 0.068 0.057 0.068 0.057 0.068 0.057 0.068 0.057 0.068 0.057 0.068 0.057 0.068 0.057 0.068 0.057 0.068 0.057 0.068 0.057 0.068 0.057 0.068 0.057 0.068 0.057 0.068 0.102 0.072 0.068 0.102 0.102 0.102 0.102 0.072 0.068 0.102 0.10	0.052 0.052 0.070 0.093 0.185 0.741 ECTV ECTV 0.051 0.069 0.092 0.182	V-Abatino- V-Abatino- 0.065 0.089 0.181 0.737 IV-Abatino- IV-Abatino- 0.065 0.089 0.181 0.737	0.100 0.100 0.192 0.748 VARV VARV	AKMV AKMV 0.161 0.161 0.717 AKMV 0.158 0.158 0.442	0.453 AKPV 0.740 AKPV AKPV	New World

						ML tree of	87 OPXV c	ore genomes	;						
	VACV	VACV-like	CPXV-like1	CPXV-like2	VARV-like	TATV	CMLV	ABATINO	MPXV	ECTV	<b>FV-Abatino-</b>	VARV	AKMV	AKPV	New World
VACV															
VACV-like	0.026														
CPXV-like1	0.042	0.033													
CPXV-like2	0.040	0.053	0.034												
VARV-like	0.037	0.027	0.031	0.051											
TATV	0.041	0.031	0.035	0.055	0.016										
CMLV	0.045	0.035	0.039	0.059	0.020	0.012									
ABATINO	0.060	0.051	0.049	0.060	0.048	0.052	0.056								
MPXV	0.039	0.032	0.050	0.070	0.044	0.048	0.052	0.067							
ECTV	0.067	0.057	0.055	0.067	0.055	0.059	0.063	0.032	0.074						
ECTV-Abatino-like	0.057	0.052	0.045	0.049	0.045	0.049	0.053	0.046	0.063	0.053					
VARV	0.054	0.044	0.048	0.068	0.029	0.021	0.025	0.065	0.060	0.072	0.067				
AKMV	0.096	0.086	0.085	0.096	0.084	0.088	0.092	0.087	0.103	0.094	0.089	0.101			
AKPV	0.187	0.177	0.175	0.187	0.175	0.179	0.183	0.178	0.194	0.184	0.180	0.191	0.159		
New World	0.739	0.729	0.728	0.739	0.727	0.731	0.735	0.730	0.746	0.737	0.732	0.744	0.711	0.734	
						BI tree of	87 OPXV c	ore genomes							
	VACV	VACV-like	CPXV-like1	CPXV-like2	VARV-like	TATV	CMLV	ABATINO	MPXV	ECTV	<b>FV-Abatino-</b>	VARV	AKMV	AKPV	New World
VACV															
VACV-like	0.026														
CPXV-like1	0.043	0.033													
CPXV-like2	0.062	0.053	0.051												
VARV-like	0.037	0.027	0.031	0.051											
TATV	0.040	0.031	0.035	0.054	0.016										
CMLV	0.044	0.035	0.039	0.058	0.020	0.012									
ABATINO	0.052	0.050	0.040	0.045	0.040	0.044	0.048								
MPXV	0.039	0.031	0.049	0.069	0.043	0.047	0.051	0.066							
ECTV	0.066	0.057	0.055	0.066	0.054	0.058	0.062	0.031	0.073						
ECTV-Abatino-like	0.061	0.052	0.050	0.061	0.050	0.053	0.057	0.046	0.068	0.052					
VARV	0.053	0.043	0.047	0.067	0.028	0.020	0.024	0.064	0.059	0.070	0.066				
AKMV	0.095	0.085	0.083	0.095	0.083	0.087	0.091	0.086	0.101	0.092	0.087	0.099			
AKPV	0.183	0.174	0.172	0.183	0.171	0.175	0.179	0.174	0.190	0.181	0.176	0.188	0.155		
New World	0.464	0.454	0.452	0.464	0.452	0.456	0.460	0.455	0.470	0.461	0.456	0.468	0.436	0.458	
						ML tree of	OPXV ortho	logous genes	s						
	VACV	VACV-like	CPXV-like1	CPXV-like2	VARV-like	TATV	CMLV	ABATINO	MPXV	ECTV	<b>FV-Abatino-</b>	VARV	AKMV	AKPV	New World
VACV															
VACV-like	0.024														
CPXV-like1	0.042	0.034													
CPXV-like2	0.061	0.053	0.058												
VARV-like	0.038	0.030	0.029	0.054											
TATV	0.041	0.033	0.033	0.057	0.017										
CMLV	0.045	0.038	0.037	0.062	0.021	0.013									
ABATINO	0.056	0.048	0.054	0.062	0.049	0.053	0.057								
MPXV	0.039	0.023	0.049	0.068	0.045	0.048	0.052	0.063							
ECTV	0.061	0.053	0.058	0.067	0.054	0.057	0.062	0.030	0.061						
ECTV-Abatino-like	0.059	0.052	0.057	0.066	0.053	0.056	0.060	0.049	0.060	0.054					
VARV	0.052	0.044	0.043	0.068	0.027	0.018	0.023	0.063	0.052	0.068	0.066				
AKMV	0.092	0.084	0.089	0.098	0.085	0.088	0.093	0.087	0.092	0.092	0.091	0.099			
AKPV	0.189	0.181	0.187	0.195	0.182	0.186	0.190	0.185	0.190	0.189	0.188	0.196	0.164		
New World	0.762	0.754	0.760	0.768	0.755	0.759	0.763	0.758	0.763	0.762	0.761	0.769	0.737	0.762	

**Table S7.** Genetic distances between CPXV clusters and OPXV species estimated by p-distances from the alignment of 62 conserved genes (A), 87 OPXV whole genomes (B), core genomes (C) and orthologous genes (D).

				1			А			i			1		1
	VACV	VACV-like	CPXV-like1	CPXV-like2	VARV-like	TATV	CMLV	ABATINO	MPXV	ECTV	<b>FV-Abatino-</b>	VARV	AKMV	AKPV	New World
VACV															
VACV-like	0.013														
CPXV-like1	0.016	0.014													
CPXV-like?	0.022	0.019	0.019												
VADV liko	0.015	0.013	0.01/	0.021											+
VARV-IIKC	0.015	0.015	0.014	0.021	0.011										+
TATV	0.018	0.016	0.016	0.023	0.011										
CMLV	0.020	0.018	0.019	0.025	0.014	0.008									
ABATINO	0.025	0.022	0.023	0.023	0.023	0.026	0.028								
MPXV	0.021	0.018	0.021	0.024	0.020	0.023	0.025	0.027							
ECTV	0.024	0.021	0.023	0.025	0.022	0.025	0.028	0.016	0.026						
ECTV-Abatino-like	0.020	0.017	0.020	0.021	0.020	0.023	0.025	0.022	0.023	0.023					<u> </u>
VADV	0.024	0.022	0.020	0.021	0.020	0.010	0.025	0.022	0.020	0.025	0.020				+
VARV	0.024	0.022	0.022	0.029	0.017	0.012	0.015	0.052	0.028	0.051	0.029	0.017			+
AKMV	0.042	0.040	0.039	0.043	0.039	0.041	0.043	0.044	0.045	0.044	0.044	0.046			
AKPV	0.075	0.073	0.073	0.075	0.074	0.075	0.076	0.075	0.077	0.077	0.074	0.079	0.068		
New World	0.127	0.125	0.126	0.126	0.125	0.126	0.127	0.127	0.128	0.128	0.126	0.128	0.126	0.130	
							В								
	VACV	VACV-like	CPXV-like1	CPXV-like2	VARV-like	TATV	CMLV	ABATINO	MPXV	ECTV	FV-Abatino-	VARV	AKMV	AKPV	New World
VACV															
VACUERO	0.015														+
ODVU PL 1	0.013	0.017									+				
CrAv-like1	0.019	0.017	0.071												
CPXV-like2	0.026	0.023	0.021					<b>↓</b>							<u> </u>
VARV-like	0.019	0.016	0.015	0.024											
TATV	0.022	0.019	0.018	0.027	0.012										
CMLV	0.025	0.022	0.021	0.030	0.015	0.009									
ABATINO	0.030	0.026	0.028	0.028	0.028	0.031	0.034								1
MPVV	0.024	0.021	0.025	0.020	0.025	0.028	0.031	0.032							+
ECTIV	0.024	0.021	0.023	0.029	0.025	0.028	0.031	0.032	0.024						+
ECTV	0.031	0.028	0.030	0.031	0.030	0.034	0.036	0.021	0.034						
ECTV-Abatino-like	0.030	0.027	0.027	0.027	0.029	0.032	0.035	0.028	0.033	0.032					
VARV	0.030	0.027	0.025	0.034	0.019	0.014	0.017	0.038	0.035	0.040	0.039				
AKMV	0.049	0.046	0.045	0.050	0.045	0.046	0.049	0.050	0.054	0.050	0.053	0.053			
AKPV	0.088	0.085	0.085	0.086	0.085	0.087	0.089	0.087	0.090	0.087	0.087	0.092	0.081		
-										0.4.80	0.4.40	0.4.50	0.150	0.4.50	-
New World	0.150	0.148	0 148	0.148	0.148	0 149	0 1 5 0	0 1 4 9	0 1 5 1	0150	0 49	0 152	0150	0153	
New World	0.150	0.148	0.148	0.148	0.148	0.149	0.150 B	0.149	0.151	0.150	0.149	0.152	0.150	0.153	
New World	0.150	0.148	0.148	0.148	0.148	0.149	0.150 B	0.149	0.151	0.150	0.149	0.152	0.150	0.153	N
New World	0.150 VACV	0.148 VACV-like	0.148 CPXV-like1	0.148 CPXV-like2	0.148 VARV-like	0.149 TATV	0.150 B CMLV	0.149 ABATINO	0.151 MPXV	0.150 ECTV	0.149 <b>FV-Abatino-</b>	0.152 VARV	AKMV	0.153 AKPV	New World
New World VACV	0.150 VACV	0.148 VACV-like	0.148 CPXV-like1	0.148 CPXV-like2	0.148 VARV-like	0.149 TATV	0.150 B CMLV	0.149 ABATINO	0.151 MPXV	0.150 ECTV	0.149 <b>FV-Abatino</b> -	0.152 VARV	0.150	0.153 AKPV	New World
New World VACV VACV-like	0.150 VACV 0.015	0.148	0.148 CPXV-like1	0.148 CPXV-like2	0.148 VARV-like	0.149 TATV	0.150 B CMLV	0.149 ABATINO	0.151 MPXV	0.150 ECTV	0.149	0.152 VARV	AKMV	0.153 AKPV	New World
New World VACV VACV-like CPXV-like1	0.150 VACV 0.015 0.019	0.148 VACV-like	0.148 CPXV-like1	0.148 CPXV-like2	0.148 VARV-like	0.149 TATV	0.150 B CMLV	0.149 ABATINO	0.151 MPXV	0.150 ECTV	0.149	0.152 VARV	0.130	0.153 AKPV	New World
New World VACV VACV-like CPXV-like1 CPXV-like2	0.150 VACV 0.015 0.019 0.026	0.148 VACV-like 0.017 0.023	0.148 CPXV-like1	0.148 CPXV-like2	0.148 VARV-like	0.149 TATV	0.150 B CMLV	0.149 ABATINO	0.151 MPXV	ectv	0.149	0.152 VARV	AKMV	0.153 AKPV	New World
New World VACV VACV-like CPXV-like1 CPXV-like2 VARV-like	0.150 VACV 0.015 0.019 0.026 0.019	0.148 VACV-like 0.017 0.023 0.016	0.148 CPXV-like1 0.021 0.015	0.148 CPXV-like2	0.148 VARV-like	0.149 TATV	0.150 B CMLV	0.149	0.151 MPXV	ECTV	CV-Abatino-	0.152 VARV	AKMV	0.153	New World
New World VACV VACV-like CPXV-like1 CPXV-like2 VARV-like TATV	0.150 VACV 0.015 0.019 0.026 0.019 0.023	0.148 VACV-like 0.017 0.023 0.016 0.020	0.148 CPXV-like1 0.021 0.015 0.018	0.148 CPXV-like2	0.148	0.149 TATV	0.150 B CMLV	ABATINO	0.151 MPXV	ECTV	C.149	VARV	0.130	0.153	New World
New World VACV VACV VACV-like CPXV-like CPXV-like TATV CPXV-like TATV	0.150 VACV 0.015 0.019 0.026 0.019 0.023 0.023	0.148 VACV-like 0.017 0.023 0.016 0.020	0.148 CPXV-like1 0.021 0.015 0.018 0.011	0.148 CPXV-like2 0.024 0.028	0.148	0.149 TATV	0.150 B CMLV	0.149	0.151 MPXV	ECTV	IV-Abatino-	VARV	0.130	0.153	New World
New World VACV VACV-like CPXV-like1 CPXV-like2 VARV-like TATV CMLV	0.150 VACV 0.015 0.019 0.026 0.019 0.023 0.026 0.026	0.148 VACV-like 0.017 0.023 0.016 0.020 0.022	0.148 CPXV-like1 0.021 0.015 0.018 0.021 0.021	0.148 CPXV-like2 0.024 0.028 0.030 0.030	0.148 VARV-like 0.012 0.015	0.149 TATV 0.009	0.150 B CMLV	0.149	0.151 MPXV	ECTV	IV-Abatino-	VARV	AKMV	0.153	New World
New World VACV VACV-like CPXV-like1 CPXV-like2 VARV-like TATV CMLV ABATINO	0.150 VACV 0.015 0.019 0.026 0.019 0.023 0.026 0.030	0.148 VACV-like 0.017 0.023 0.016 0.020 0.022 0.022	0.148 CPXV-like1 0.021 0.015 0.018 0.021 0.027	0.148 CPXV-like2 0.024 0.028 0.030 0.028	0.148 VARV-like 0.012 0.015 0.028	0.149 TATV 0.009 0.031	0.150 B CMLV 0.034	ABATINO	0.151 MPXV	ECTV	V-Abatino-	VARV	AKMV	0.153	New World
New World VACV VACV VACV-like CPXV-like CPXV-like CPXV-like VARV-like TATV CMLV ABATINO MPXV	0.150 VACV 0.015 0.019 0.026 0.019 0.023 0.026 0.030 0.024	0.148 VACV-like 0.017 0.023 0.016 0.020 0.022 0.026 0.021	0.148 CPXV-like 1 0.021 0.015 0.018 0.021 0.027 0.026	0.148 CPXV-like2 0.024 0.028 0.030 0.028 0.030	0.148 VAR V-like 0.012 0.015 0.028 0.026	0.149 TATV 0.009 0.031 0.029	0.150 B CMLV 0.034 0.031	0.149	0.151 MPXV	0.150	V-Abatino-	0.152 VARV	AKMV	0.153	New World
New World VACV VACV VACV-like CPXV-like1 CPXV-like2 VARV-like TATV CMLV ABATINO MPXV ECTV	0.150 VACV 0.015 0.019 0.026 0.019 0.023 0.026 0.030 0.024 0.032	0.148 VACV-like 0.017 0.023 0.016 0.020 0.022 0.026 0.021 0.029	0.148 CPXV-like1 0.021 0.015 0.018 0.021 0.027 0.026 0.030	0.148 CPXV-like2 0.024 0.028 0.030 0.028 0.030 0.032	0.148 VARV-like 0.012 0.015 0.028 0.026 0.031	0.149 TATV 0.009 0.031 0.029 0.034	0.150 B CMLV 0.034 0.031 0.037	0.149  ABATINO  0.032 0.022	0.151 MPXV 0.035	0.150	V-Abatino-	0.152 VARV	AKMV	0.153	New World
New World VACV-VV VACV-Iike CPXV-Iike CPXV-Iike TATV CMLV ABATINO MPXV ECTV-Abatino-Iike	0.150 VACV 0.015 0.019 0.026 0.023 0.026 0.023 0.026 0.030 0.024 0.032 0.030	0.148 VACV-like 0.017 0.023 0.016 0.020 0.022 0.022 0.022 0.022 0.022 0.022 0.022 0.022	0.148 CPXV-like1 0.021 0.015 0.015 0.018 0.021 0.027 0.026 0.030 0.028	0.148 CPXV-like2 0.024 0.028 0.030 0.028 0.030 0.028 0.030 0.032 0.027	0.148 VARV-like 0.012 0.015 0.028 0.026 0.031 0.029	0.149 TATV 0.009 0.031 0.029 0.034 0.033	0.150 B CMLV 0.034 0.031 0.037 0.035	0.149 ABATINO 0.032 0.032 0.022 0.029	0.151 MPXV 0.035 0.033	0.150 ECTV	IV-Abatino-	0.152 VARV	AKMV	0.153	New World
New World VACV VACV-like CPXV-like1 CPXV-like2 VARV-like TATV CMLV ABATINO MPXV ECTV-Abatino-like VARV	0.150 VACV 0.015 0.019 0.026 0.019 0.023 0.026 0.020 0.020 0.020 0.030 0.032 0.030 0.031	0.148 VACV-like 0.017 0.023 0.016 0.020 0.022 0.026 0.021 0.029 0.027 0.027	0.148 CPXV-like1 0.021 0.015 0.015 0.018 0.021 0.027 0.026 0.030 0.028 0.026	0.148 CPXV-like2 0.024 0.028 0.030 0.028 0.030 0.032 0.027 0.036	0.148 VARV-like 0.012 0.012 0.015 0.028 0.026 0.031 0.029 0.021	0.149 TATV 0.009 0.031 0.029 0.034 0.033 0.015	0.150 B CMLV 0.034 0.031 0.037 0.035 0.018	0.149 ABATINO ABATINO 0.032 0.022 0.029 0.039	0.151 MPXV 0.035 0.033 0.036	0.150 ECTV	0.149	VARV	AKMV	0.153	New World
New World VACV VACV VACV-like CPXV-like1 CPXV-like2 VARV-like TATV CMLV ABATINO MPXV ECTV ECTV-Abatino-like VARV AKMV	0.150 VACV 0.015 0.019 0.026 0.019 0.023 0.026 0.030 0.024 0.032 0.030 0.031 0.049	0.148 VACV-like 0.017 0.023 0.016 0.020 0.022 0.026 0.021 0.029 0.027 0.029 0.027	0.148 CPXV-like1 0.021 0.015 0.015 0.021 0.027 0.026 0.030 0.028 0.028 0.045	0.148 CPXV-like2 0.024 0.028 0.030 0.028 0.030 0.032 0.032 0.027 0.036	0.148 VARV-like 0.012 0.015 0.028 0.026 0.031 0.029 0.021	0.149 TATV 0.009 0.031 0.029 0.034 0.033 0.015 0.047	0.150 B CMLV 0.034 0.031 0.037 0.035 0.018 0.049	0.149 ABATINO ABATINO 0.032 0.032 0.022 0.029 0.050 0.	0.151 MPXV 0.035 0.033 0.036 0.054	0.150 ECTV	0.149  IV-Abatino-  IV-Abatino-  IV-Abatino-  IV-Abatino-  IV-Abatino-  IV-Abatino- IV-Aba	0.152 VARV	AKMV	0.153 AKPV	New World
New World VACV VACV-like CPXV-like1 CPXV-like2 VARV-like TATV CMLV ABATTNO MPXV ECTV ECTV-Abatino-like VARV AKMV AKPV	0.150 VACV 0.015 0.019 0.026 0.030 0.024 0.032 0.030 0.031 0.049 0.031 0.049	0.148 VACV-like 0.017 0.023 0.016 0.020 0.022 0.026 0.021 0.029 0.027 0.028 0.047 0.028	0.148 CPXV-like1 0.021 0.015 0.018 0.027 0.026 0.030 0.028 0.026 0.045 0.085	0.148 CPXV-like2 0.024 0.028 0.030 0.028 0.030 0.030 0.032 0.032 0.036 0.050 0.050	0.148 VARV-like 0.012 0.012 0.028 0.026 0.031 0.029 0.021 0.045 0.085	0.149 TATV 0.009 0.031 0.029 0.034 0.033 0.015 0.047	0.150 B CMLV 0.034 0.031 0.037 0.035 0.018 0.049 0.089	0.149 ABATINO ABATINO 0.032 0.032 0.029 0.039 0.050 0.05 0.050 0.0	0.151 MPXV 0.035 0.033 0.036 0.036	0.150 ECTV	0.149  IV-Abatino-  IV-Abatino-  0.040 0.053 0.087	0.152 VARV	AKMV	0.153	New World
New World VACV-VV VACV-Iike CPXV-Iike CPXV-Iike TATV CMLV ABATINO MPXV ECTV-Abatino-Iike VARV AKMV AKMV AKPV Very Weld	0.150 VACV 0.015 0.019 0.026 0.019 0.023 0.026 0.030 0.024 0.032 0.030 0.031 0.049 0.045	0.148 VACV-like 0.017 0.023 0.016 0.020 0.022 0.026 0.022 0.026 0.029 0.027 0.029 0.027 0.028 0.047 0.086	0.148 CPXV-like1 0.021 0.015 0.018 0.021 0.027 0.026 0.030 0.028 0.026 0.045 0.045 0.045	0.148 CPXV-like2 0.024 0.028 0.030 0.028 0.030 0.028 0.032 0.032 0.032 0.032 0.032 0.032 0.032 0.032 0.027 0.036 0.050 0.086 0.050	0.148 VARV-like 0.012 0.015 0.028 0.028 0.028 0.029 0.021 0.045 0.045 0.045	0.149 TATV 0.009 0.031 0.029 0.034 0.033 0.015 0.047 0.047 0.047	0.150 B CMLV 0.034 0.031 0.037 0.035 0.018 0.049 0.049	0.149 ABATINO ABATINO O O O O O O O O O O O O O O O O O O	0.151 MPXV 0.035 0.033 0.036 0.054 0.090 0.152	0.150 ECTV 0.033 0.042 0.049 0.087	0.149  IV-Abatino-  0.040 0.053 0.087 0.015	0.152 VARV	AKMV	0.153	New World
New World VACV-V VACV-Iike CPXV-Iike1 CPXV-Iike2 VARV-Iike TATV CMLV ABATINO MPXV ECTV ECTV ECTV ECTV AkMV AKMV AKMV New World	0.150 VACV 0.015 0.019 0.026 0.019 0.023 0.026 0.030 0.024 0.030 0.031 0.031 0.049 0.088 0.151	0.148 VACV-like 0.017 0.023 0.016 0.020 0.022 0.022 0.022 0.029 0.027 0.029 0.027 0.028 0.047 0.086 0.149	0.148 CPXV-like1 0.021 0.015 0.018 0.021 0.027 0.026 0.030 0.028 0.026 0.045 0.086 0.149	0.148 CPXV-like2 0.024 0.028 0.030 0.028 0.030 0.027 0.032 0.032 0.027 0.036 0.050 0.086 0.150	0.148 VARV-like 0.012 0.015 0.026 0.026 0.031 0.029 0.021 0.029 0.021 0.045 0.086 0.149	0.149 TATV 0.009 0.031 0.029 0.034 0.033 0.015 0.047 0.087 0.151	0.150 B CMLV 0.034 0.031 0.037 0.035 0.018 0.049 0.089 0.152	0.149  ABATINO  ABATINO  0.0032 0.022 0.029 0.039 0.050 0.087 0.150	0.151 MPXV 0.035 0.033 0.036 0.054 0.090 0.152	0.150 ECTV 0.033 0.042 0.042 0.049 0.087 0.152	0.149  IV-Abatino-  IV-Abatino-  IV-Abatino-  IV-Abatino-  IV-Abatino-  IV-Abatino- IV-Aba	0.152 VARV	AKMV AKMV 0.081 0.151	0.153 AKPV 0.154	New World
New World VACV VACV-like CPXV-like1 CPXV-like2 VARV-like2 VARV-like CMLV ABATINO MPXV ECTV ECTV-Abatino-like VARV AKMV AKMV New World	0.150 VACV 0.015 0.019 0.026 0.019 0.026 0.026 0.030 0.024 0.030 0.032 0.030 0.031 0.049 0.088 0.151	0.148 VACV-like 0.017 0.023 0.016 0.020 0.022 0.026 0.021 0.029 0.027 0.028 0.027 0.028 0.028 0.028	0.148 CPXV-like1 0.021 0.015 0.018 0.021 0.021 0.027 0.026 0.030 0.028 0.026 0.026 0.026 0.086 0.149	0.148 CPXV-like2 0.024 0.024 0.028 0.030 0.028 0.030 0.032 0.027 0.036 0.050 0.086 0.150	0.148 VARV-like 0.012 0.012 0.015 0.028 0.026 0.031 0.029 0.021 0.045 0.086 0.149	0.149 TATV 0.009 0.031 0.029 0.034 0.033 0.015 0.047 0.151	0.150 B CMLV 0.034 0.031 0.037 0.035 0.018 0.049 0.089 0.152 D	0.149 ABATINO ABATINO O O O O O O O O O O O O O O O O O O	0.151 MPXV 0.035 0.035 0.033 0.036 0.054 0.090 0.152	0.150 ECTV 0.033 0.042 0.049 0.087 0.152	0.149  IV-Abatino-  IV-Abatino-  IV-Abatino-  IV-Abatino-  IV-Abatino-  IV-Abatino- IV-Aba	0.152 VARV	0.150 AKMV 0.081 0.151	0.153 AKPV	New World
New World VACV VACV-like CPXV-like1 CPXV-like2 VARV-like TATV CMLV ABATINO MPXV ECTV ECTV-Abatino-like VARV AKMV AKMV New World	0.150 VACV 0.015 0.019 0.026 0.019 0.023 0.026 0.030 0.024 0.032 0.030 0.024 0.032 0.030 0.024 0.032 0.031 0.049 0.088 0.151 VACV	0.148 VACV-like 0.017 0.023 0.016 0.020 0.022 0.022 0.022 0.021 0.029 0.027 0.028 0.047 0.086 0.0149 VACV-like	0.148 CPXV-like1 0.021 0.015 0.018 0.021 0.027 0.026 0.030 0.028 0.026 0.045 0.086 0.149 CPXV-like1	0.148 CPXV-like2 0.024 0.028 0.030 0.028 0.030 0.032 0.032 0.036 0.050 0.086 0.150 CPXV-like2	0.148 VARV-like 0.01 0.012 0.012 0.028 0.026 0.021 0.029 0.021 0.045 0.086 0.149 VARV-like VARV-like	0.149 TATV 0.009 0.031 0.029 0.034 0.033 0.015 0.047 0.087 0.151 TATV	0.150 B CMLV 0.034 0.031 0.037 0.035 0.018 0.049 0.049 0.049 0.0152 D CMLV	0.149 ABATINO ABATINO 0.032 0.032 0.022 0.029 0.039 0.050 0.087 0.150 ABATINO	0.151 MPXV 0.035 0.035 0.033 0.036 0.054 0.090 0.152 MPXV	0.150 ECTV 0.033 0.042 0.049 0.087 0.152 ECTV	0.149  IV-Abatino-  IV-Abatino-  0.040 0.053 0.087 0.151  IV-Abatino-  IV-Abatino-	0.152 VARV 0.054 0.093 0.154 VARV	0.150 AKMV 0.081 0.151 AKMV	0.153 AKPV 0.154 0.154	New World
New World VACV VACV-like CPXV-like CPXV-like CPXV-like TATV CMLV ABATINO MPXV ECTV ECTV-Abatino-like VARV AKMV AKMV New World VACV	0.150 VACV 0.015 0.019 0.026 0.019 0.023 0.026 0.030 0.024 0.032 0.030 0.031 0.049 0.049 0.088 0.151 VACV	0.148 VACV-like 0.017 0.023 0.016 0.020 0.022 0.026 0.021 0.029 0.027 0.029 0.027 0.028 0.047 0.028 0.047 0.086 0.149 VACV-like	0.148 CPXV-like1 0.021 0.015 0.018 0.021 0.026 0.030 0.026 0.026 0.045 0.086 0.149 CPXV-like1	0.148 CPXV-like2 0.024 0.028 0.030 0.028 0.030 0.032 0.027 0.036 0.050 0.086 0.150 CPXV-like2	0.148 VARV-like 0.012 0.012 0.015 0.028 0.026 0.031 0.029 0.021 0.045 0.086 0.086 0.086 VARV-like	0.149 TATV 0.009 0.031 0.029 0.034 0.033 0.015 0.047 0.087 0.151 TATV	0.150 B CMLV 0.034 0.031 0.037 0.035 0.018 0.049 0.089 0.152 D CMLV	0.149 ABATINO ABATINO 0.032 0.032 0.022 0.029 0.039 0.050 0.087 0.0150 ABATINO	0.151 MPXV 0.035 0.033 0.036 0.054 0.090 0.152 MPXV	0.150 ECTV 0.033 0.042 0.049 0.087 0.152 ECTV	0.149  IV-Abatino-  0.040 0.053 0.087 0.151  IV-Abatino-  IV-IV-IV-IV-IV- IV-IV-IV- IV-IV-IV- IV-IV-	0.152 VARV 0.054 0.054 0.054 0.154 VARV	0.150 AKMV 0.081 0.081 AKMV	0.153 AKPV 0.154 0.154	New World
New World VACV-VV VACV-Iike CPXV-Iike1 CPXV-Iike2 VARV-Iike TATV CMLV ABATINO MPXV ECTV-Abatino-Iike VARV AKMV AKMV AKPV New World VACV VACV VACV-Iike	0.150 VACV 0.015 0.019 0.026 0.019 0.023 0.026 0.030 0.024 0.030 0.031 0.049 0.088 0.151 VACV VACV	0.148 VACV-like 0.017 0.023 0.016 0.020 0.022 0.026 0.029 0.027 0.028 0.047 0.086 0.149 VACV-like	0.148 CPXV-like1 0.021 0.015 0.015 0.018 0.021 0.027 0.026 0.027 0.026 0.030 0.028 0.045 0.045 0.045 0.045 0.045 CPXV-like1 CPXV-like1	0.148 CPXV-like2 0.024 0.028 0.030 0.028 0.030 0.028 0.032 0.048 0.150 0.05	0.148 VARV-like 0.012 0.012 0.015 0.028 0.026 0.031 0.029 0.021 0.045 0.086 0.149 VARV-like VARV-like	0.149 TATV 0.009 0.031 0.029 0.034 0.033 0.015 0.047 0.087 0.151 TATV	0.150 B CMLV 0.034 0.031 0.037 0.035 0.018 0.049 0.049 0.089 0.152 D CMLV	0.149 ABATINO ABATINO 0.032 0.022 0.029 0.039 0.050 0.087 0.150 ABATINO	0.151 MPXV 0.035 0.033 0.036 0.054 0.090 0.152 MPXV	0.150 ECTV 0.033 0.042 0.049 0.087 0.152 ECTV	0.149	0.152 VARV 0.054 0.093 0.154 VARV	0.150 AKMV 0.081 0.151 AKMV	0.153 AKPV 0.154 0.154	New World
New World VACV VACV VACV-like CPXV-like CPXV-like CPXV-like TATV CMLV ABATINO MPXV ECTV ECTV-BECTVB-BEC	0.150 VACV 0.015 0.019 0.026 0.019 0.023 0.026 0.030 0.024 0.030 0.031 0.030 0.031 0.049 0.088 0.151 VACV	0.148 VACV-like 0.017 0.023 0.016 0.020 0.022 0.022 0.027 0.028 0.047 0.088 0.149 VACV-like VACV-like 0.017	0.148  CPXV-like1  0.021 0.015 0.018 0.027 0.026 0.030 0.028 0.026 0.048 0.048 0.048 0.149  CPXV-like1	0.148 CPXV-like2 0.024 0.028 0.028 0.028 0.028 0.027 0.036 0.027 0.036 0.050 CPXV-like2	0.148 VARV-like 0.015 0.015 0.028 0.026 0.031 0.029 0.021 0.045 0.086 0.149 VARV-like VARV-like	0.149 TATV 0.009 0.031 0.029 0.034 0.033 0.015 0.047 0.151 TATV	0.150 B CMLV 0.034 0.031 0.037 0.035 0.018 0.048 0.089 0.152 D CMLV	0.149 ABATINO ABATINO O 0.032 0.032 0.029 0.039 0.050 ABATINO ABATINO	0.151 MPXV 0.035 0.033 0.036 0.054 0.090 0.152 MPXV	0.150 ECTV 0.033 0.042 0.042 0.042 0.057 0.152 ECTV	0.149	0.152 VARV 0.054 0.093 0.154 VARV	0.150 AKMV 0.081 0.151 AKMV	0.153 AKPV 0.154 0.154	New World
New World VACV VACV-like CPXV-like1 CPXV-like2 VARV-like2 VARV-like TATV CMLV ABATINO MPXV ECTV ECTV-Abatino-like VARV AKPV New World VACV VACV-like CPXV-like1 CPXV-like2	0.150 VACV 0.015 0.019 0.026 0.019 0.023 0.020 0.030 0.024 0.032 0.030 0.024 0.032 0.030 0.024 0.032 0.031 0.049 0.088 0.151 VACV	0.148 VACV-like 0.017 0.023 0.016 0.020 0.022 0.026 0.021 0.029 0.027 0.028 0.047 0.086 0.149 VACV-like VACV-like 0.017 0.024	0.148 CPXV-like1 0.021 0.015 0.018 0.027 0.026 0.030 0.028 0.026 0.045 0.086 0.149 CPXV-like1 CPXV-like1	0.148 CPXV-like2 0.024 0.028 0.030 0.028 0.030 0.032 0.032 0.036 0.050 0.086 0.150 CPXV-like2	0.148 VARV-like 0.015 0.015 0.028 0.026 0.031 0.029 0.021 0.045 0.086 0.149 VARV-like VARV-like	0.149 TATV 0.009 0.031 0.029 0.034 0.033 0.015 0.047 0.087 0.151 TATV	0.150 B CMLV 0.034 0.031 0.037 0.035 0.018 0.049 0.089 0.089 0.089 CMLV	0.149 ABATINO ABATINO 0.032 0.032 0.022 0.029 0.039 0.050 0.087 0.150 ABATINO	0.151 MPXV 0.035 0.035 0.033 0.036 0.054 0.090 0.152 MPXV	0.150 ECTV 0.033 0.042 0.049 0.087 0.152 ECTV	0.149	0.152 VARV 0.054 0.093 0.154 VARV	0.150 AKMV 0.081 0.151 AKMV	0.153 AKPV 0.154 0.154	New World
New World VACV VACV-like CPXV-like1 CPXV-like2 VARV-like2 VARV-like TATV CMLV ABATINO MPXV ECTV ECTV-Abatino-like VARV AKMV AKPV New World VACV VACV-like CPXV-like1 CPXV-like1 CPXV-like2	0.150 VACV 0.015 0.019 0.026 0.019 0.023 0.026 0.030 0.024 0.032 0.030 0.031 0.049 0.049 0.049 0.049 0.049 0.051 VACV	0.148 VACV-like 0.017 0.023 0.016 0.020 0.022 0.026 0.021 0.029 0.027 0.028 0.047 0.028 0.047 0.028 0.047 0.028 0.047 0.028 0.0149 VACV-like	0.148 CPXV-like1 0.021 0.015 0.018 0.021 0.026 0.030 0.026 0.026 0.045 0.086 0.149 CPXV-like1 CPXV-like1	0.148 CPXV-like2 0.024 0.028 0.030 0.028 0.030 0.032 0.032 0.032 0.036 0.050 0.086 0.150 CPXV-like2 CPXV-like2	0.148 VARV-like 0.012 0.012 0.015 0.028 0.026 0.031 0.029 0.021 0.045 0.086 0.045 VARV-like VARV-like	0.149 TATV 0.009 0.031 0.029 0.034 0.033 0.015 0.047 0.087 0.151 TATV	0.150 B CMLV 0.034 0.031 0.037 0.035 0.018 0.049 0.089 0.049 0.089 0.059 D CMLV	0.149 ABATINO ABATINO 0.032 0.022 0.029 0.039 0.050 0.087 0.150 ABATINO ABATINO	0.151 MPXV 0.035 0.033 0.036 0.054 0.090 0.152 MPXV	0.150 ECTV 0.033 0.042 0.049 0.087 0.152 ECTV	0.149  IV-Abatino-  0.040 0.053 0.087 0.151  IV-Abatino-  IV-Abatino-  IV-Abatino- IV-IV-IV-IV-IV-IV-IV-IV-IV-IV-IV-IV-IV-I	0.152 VARV 0.054 0.093 0.154 VARV	0.150 AKMV 0.150 0.081 0.151 AKMV	0.153 AKPV 0.154 0.154	New World
New World VACV VACV-like CPXV-like1 CPXV-like2 VARV-like2 VARV-like CMLV ABATINO MPXV ECTV ECTV ECTV-Abatino-like VARV AKPV New World VACV-like CPXV-like1 CPXV-like1 CPXV-like2 VARV-like2 VARV-like2	0.150 VACV 0.015 0.019 0.026 0.019 0.023 0.026 0.030 0.024 0.030 0.031 0.049 0.088 0.151 VACV VACV	0.148 VACV-like 0.017 0.023 0.016 0.022 0.026 0.021 0.029 0.027 0.028 0.047 0.086 0.149 VACV-like 0.017 0.024 0.017 0.024 0.016	0.148 CPXV-like1 0.021 0.015 0.018 0.021 0.021 0.027 0.026 0.030 0.028 0.026 0.045 0.045 0.086 0.149 CPXV-like1 CPXV-like1	0.148 CPXV-like2 0.024 0.024 0.028 0.030 0.028 0.030 0.027 0.036 0.050 0.086 0.150 CPXV-like2 0.025 0.025 0.025	0.148 VARV-like 0.012 0.012 0.015 0.028 0.026 0.031 0.029 0.021 0.045 0.	0.149 TATV 0.009 0.031 0.029 0.034 0.033 0.015 0.047 0.087 0.151 TATV	0.150 B CMLV 0.034 0.031 0.037 0.035 0.018 0.049 0.089 0.152 D CMLV	0.149  ABATINO  ABATINO  0.032 0.022 0.029 0.030 0.050 0.050 0.087 0.150  ABATINO	0.151 MPXV 0.035 0.035 0.036 0.054 0.090 0.152 MPXV	0.150 ECTV 0.033 0.042 0.049 0.087 0.152 ECTV	0.149	0.152 VARV 0.054 0.093 0.154 VARV	0.150 AKMV 0.081 0.151 AKMV	0.153 AKPV 0.154 0.154	New World
New World VACV VACV VACV-like CPXV-like1 CPXV-like2 VARV-like2 VARV-like CMLV ABATINO MPXV ECTV ECTV-ECTV-ECTV-ECTV-ECTV-ECTV-ECTV-ECTV-	0.150 VACV 0.015 0.019 0.026 0.019 0.023 0.026 0.030 0.024 0.032 0.030 0.031 0.049 0.088 0.151 VACV VACV	0.148 VACV-like 0.017 0.023 0.016 0.020 0.022 0.022 0.027 0.028 0.047 0.086 0.149 VACV-like VACV-like 0.017 0.024 0.017 0.024 0.016 0.019	0.148 CPXV-like1 0.021 0.015 0.018 0.027 0.026 0.030 0.028 0.026 0.045 0.045 0.045 0.045 0.045 0.045 0.045 0.045 0.0149 CPXV-like1 CPXV-like1 0.022 0.015 0.017	0.148 CPXV-like2 0.024 0.028 0.028 0.028 0.028 0.027 0.036 0.027 0.036 0.050 0.086 0.150 CPXV-like2 0.086 0.150	0.148 VARV-like 0.015 0.015 0.028 0.026 0.031 0.029 0.021 0.045 0.086 0.149 VARV-like VARV-like 0.086 0.149 0.086 0.086 0.149 0.086 0.086 0.086 0.149 0.086	0.149 TATV 0.009 0.031 0.029 0.034 0.033 0.015 0.047 0.151 TATV	0.150 B CMLV 0.034 0.031 0.037 0.035 0.018 0.049 0.089 0.152 D CMLV	0.149 ABATINO ABATINO 0.032 0.032 0.029 0.039 0.050 ABATINO ABATINO	0.151 MPXV 0.035 0.033 0.036 0.054 0.090 0.152 MPXV	0.150 ECTV 0.033 0.042 0.042 0.042 0.057 0.152 ECTV	0.149	0.152 VARV 0.054 0.093 0.154 VARV	0.150 AKMV 0.081 0.081 0.151 AKMV	0.153 AKPV 0.154 0.154	New World
New World VACV VACV-like CPXV-like1 CPXV-like2 VARV-like2 VARV-like TATV CMLVV ABATINO MPXV ECTV ECTV-Abatino-like VARV AKPV New World VACV-like CPXV-like1 CPXV-like1 CPXV-like2 VARV-like TATV CMLV	0.150 VACV 0.015 0.019 0.026 0.019 0.023 0.020 0.030 0.024 0.032 0.030 0.031 0.049 0.049 0.049 0.049 VACV VACV 0.014 0.019 0.019 0.022 0.025	0.148 VACV-like 0.017 0.023 0.016 0.020 0.022 0.022 0.027 0.028 0.047 0.086 0.047 VACV-like VACV-like 0.017 0.024	0.148 CPXV-like1 0.021 0.015 0.018 0.021 0.027 0.026 0.030 0.028 0.026 0.045 0.086 0.149 CPXV-like1 CPXV-like1 0.021 0.015 0.017 0.022 0.015	0.148 CPXV-like2 0.024 0.028 0.030 0.028 0.030 0.032 0.027 0.036 0.050 0.086 0.150 CPXV-like2 CPXV-like2 0.025 0.028	0.148 VARV-like 0.015 0.015 0.028 0.026 0.031 0.029 0.021 0.045 0.086 0.149 VARV-like 0.149 0.149 0.149 0.149 0.149 0.149 0.149 0.012 0.015	0.149 TATV 0.009 0.031 0.029 0.034 0.033 0.015 0.047 0.087 0.151 TATV 0.087 0.087 0.09 0.009	0.150 B CMLV 0.034 0.031 0.037 0.035 0.018 0.049 0.089 0.089 0.089 0.089 0.0152 D CMLV	0.149  ABATINO  ABATINO  0.032  0.022  0.029  0.039  0.050  0.087  0.150  ABATINO  ABATINO  ABATINO  ABATINO  ABATINO  ABATINO  ABATINO  ABATINO ABATI	0.151 MPXV 0.035 0.033 0.036 0.054 0.090 0.152 MPXV	0.150 ECTV 0.033 0.042 0.049 0.087 0.152 ECTV	0.149	0.152 VARV	0.150 AKMV 0.081 0.151 AKMV	0.153 AKPV 0.154 0.154	New World
New World VACV VACV-like CPXV-like CPXV-like CPXV-like TATV CMLV ABATINO MPXV ECTV ECTV-Abatino-like VARV AKMV AKMV AKPV New World VACV VACV-like CPXV-like CPXV-like CPXV-like CPXV-like CPXV-like TATV CMLV ABATINO	0.150 VACV 0.015 0.019 0.026 0.019 0.023 0.026 0.030 0.024 0.032 0.030 0.031 0.049 0.049 0.049 0.049 0.049 0.049 0.049 0.049 0.049 0.0151 VACV	0.148 VACV-like 0.017 0.023 0.016 0.020 0.022 0.026 0.021 0.029 0.027 0.028 0.047 0.086 0.149 VACV-like 0.117 0.024 0.016 0.019 0.022 0.027 0.022 0.027	0.148  CPXV-like1  0.021 0.015 0.015 0.012 0.027 0.026 0.028 0.028 0.045 0.045 0.045 0.045 0.045 0.045 0.045 0.045 0.045 0.045 0.045 0.045 0.045 0.045 0.022 0.015 0.017 0.020 0.028 0.02 0.02	0.148 CPXV-like2 0.024 0.028 0.030 0.028 0.030 0.032 0.027 0.036 0.050 0.050 0.086 0.150 CPXV-like2 CPXV-like2 0.025 0.028 0.030 0.025 0.030 0.028	0.148 VARV-like 0.012 0.012 0.015 0.026 0.031 0.029 0.021 0.045 0.086 0.045 VARV-like VARV-like VARV-like 0.012 0.015 0.029	0.149 TATV 0.009 0.031 0.029 0.034 0.033 0.015 0.047 0.087 0.151 TATV 0.087 0.151 0.047 0.087 0.047 0.087 0.015 0.047 0.009 0.031 0.047 0.009 0.031 0.029 0.034 0.009 0.031 0.029 0.034 0.009 0.031 0.029 0.034 0.009 0.031 0.029 0.034 0.029 0.034 0.029 0.034 0.029 0.034 0.047 0.047 0.047 0.047 0.051 0.047 0.051 0.047 0.051 0.047 0.051 0.047 0.051 0.047 0.051 0.047 0.051 0.047 0.053 0.047 0.051 0.047 0.053 0.047 0.053 0.047 0.051 0.047 0.053 0.047 0.053 0.047 0.053 0.047 0.053 0.047 0.053 0.047 0.053 0.047 0.053 0.047 0.053 0.055 0.05	0.150 B CMLV 0.034 0.031 0.037 0.035 0.018 0.049 0.089 0.152 D CMLV 0.089 0.152 0 0.033	0.149  ABATINO  0.032 0.022 0.029 0.039 0.050 0.087 0.150  ABATINO  ABATINO	0.151 MPXV 0.035 0.033 0.036 0.054 0.090 0.152 MPXV	0.150 ECTV 0.033 0.042 0.049 0.087 0.152 ECTV	0.149	0.152 VARV	0.150 AKMV 0.081 0.151 AKMV	0.153 AKPV 0.154 0.154	New World
New World VACV VACV VACV-like CPXV-like CPXV-like CPXV-like CPXV-like CMLV ABATINO MPXV ECTV ECTV-Abatino-like VARV AKPV New World CPXV-like CPXV-like CPXV-like CPXV-like TATV CMLV ABATINO MPXV	0.150 VACV 0.015 0.019 0.026 0.019 0.026 0.030 0.024 0.030 0.031 0.049 0.030 0.031 0.049 0.088 0.151 VACV VACV 0.014 0.019 0.026 0.019 0.022 0.025 0.030	0.148 VACV-like 0.017 0.023 0.016 0.020 0.022 0.026 0.021 0.029 0.027 0.028 0.047 0.086 0.149 VACV-like 0.017 0.024 0.017 0.024 0.016 0.019 0.022 0.021	0.148 CPXV-like1 0.021 0.015 0.018 0.021 0.021 0.021 0.027 0.026 0.030 0.028 0.026 0.045 0.046 0.149 CPXV-like1 CPXV-like1 0.022 0.015 0.017 0.020 0.025	0.148 CPXV-like2 0.024 0.024 0.028 0.030 0.028 0.030 0.027 0.036 0.050 0.086 0.150 CPXV-like2 0.025 0.028 0.028 0.028 0.028 0.028 0.030 0.028 0.030 0.028 0.030 0.028 0.030 0.028 0.030 0.028 0.030 0.028 0.030 0.028 0.030 0.028 0.030 0.028 0.030 0.028 0.030 0.028 0.030 0.028 0.030 0.028 0.030 0.027 0.036 0.036 0.028 0.036 0.028 0.036 0.028 0.030 0.027 0.036 0.028 0.036 0.028 0.036 0.028 0.036 0.028 0.036 0.028 0.036 0.028 0.036 0.028 0.036 0.028 0.036 0.028 0.036 0.028 0.036 0.028 0.036 0.028 0.036 0.028 0.036 0.028 0.036 0.028 0.036 0.028 0.036 0.028 0.030 0.028 0.036 0.028 0.030 0.028 0.036 0.028 0.030 0.028 0.036 0.028 0.028 0.030 0.028 0.036 0.028	0.148 VARV-like 0.01 0.012 0.015 0.028 0.026 0.031 0.029 0.021 0.021 0.086 0.149 VARV-like VARV-like 0.086 0.149 0.012 0.012 0.015 0.02 0.02	0.149 TATV 0.009 0.031 0.029 0.034 0.033 0.015 0.047 0.087 0.151 TATV 0.087 0.151 TATV	0.150 B CMLV 0.034 0.031 0.037 0.035 0.018 0.049 0.089 0.152 D CMLV 0.089 0.152 D CMLV	0.149 ABATINO ABATINO O O O O O O O O O O O O O O O O O O	0.151 MPXV 0.035 0.033 0.036 0.054 0.090 0.152 MPXV	0.150 ECTV 0.033 0.042 0.049 0.087 0.152 ECTV	0.149	0.152 VARV	0.150 AKMV 0.081 0.151 AKMV	0.153 AKPV 0.154 0.154	New World           -
New World VACV VACV VACV-like CPXV-like1 CPXV-like2 VARV-like2 VARV-like CMLV ABATINO MPXV ECTV ECTV-Abatino-like VARV AKPV New World VACV-like CPXV-like1 CPXV-like2 VARV-like TATV CMLV ABATINO MPXV ECTV	0.150 VACV 0.015 0.019 0.026 0.019 0.023 0.020 0.030 0.031 0.049 0.088 0.151 VACV VACV 0.014 0.019 0.026 0.030 0.031 0.023 0.030 0.023 0.030 0.025 0.030 0.023 0.025 0.030 0.023 0.023 0.025 0.030 0.023 0.025 0.030 0.023 0.025 0.030 0.022 0.025 0.030 0.023 0.030 0.031 0.026 0.031 0.031 0.024 0.031 0.031 0.031 0.024 0.031 0.031 0.031 0.031 0.024 0.032 0.031 0.031 0.049 0.026 0.015 0.030 0.031 0.028 0.031 0.028 0.031 0.024 0.032 0.030 0.031 0.028 0.030 0.031 0.028 0.030 0.031 0.028 0.030 0.031 0.028 0.030 0.030 0.028 0.030 0.028 0.030 0.031 0.028 0.030 0.028 0.030 0.028 0.030 0.028 0.030 0.028 0.030 0.028 0.031 0.026 0.028 0.030 0.028 0.030 0.028 0.031 0.028 0.026 0.030 0.028 0.031 0.028 0.028 0.031 0.026 0.026 0.026 0.026 0.026 0.026 0.026 0.026 0.026 0.030 0.022 0.025 0.030 0.023 0.030 0.022 0.030 0.025 0.030 0.030 0.025 0.030 0.025 0.030 0.025 0.030 0.025 0.031 0.025 0.030 0.031 0.025 0.030 0.031 0.025 0.030 0.031 0.025 0.030 0.031 0.025 0.030 0.031 0.025 0.030 0.031 0.031 0.025 0.033 0.035 0.035 0.035 0.035 0.035 0.035 0.035 0.035 0.035 0.035 0.035 0.035 0.035 0.035	0.148 VACV-like 0.017 0.023 0.016 0.020 0.022 0.022 0.027 0.028 0.047 0.086 0.149 VACV-like VACV-like 0.017 0.024 0.017 0.024 0.016 0.019 0.022 0.027 0.028	0.148 CPXV-like1 0.021 0.015 0.018 0.027 0.026 0.030 0.028 0.026 0.045 0.045 0.045 0.045 0.045 0.045 0.045 0.045 0.022 0.015 0.017 0.022 0.015 0.017 0.022 0.015 0.012 0.022 0.022 0.025 0.035 0.025 0.035 0.035 0.021 0.022 0.022 0.025 0.035 0.03	0.148 CPXV-like2 0.024 0.028 0.028 0.028 0.028 0.027 0.036 0.027 0.036 0.050 0.086 0.150 CPXV-like2 0.086 0.150 CPXV-like2 0.025 0.028 0.028 0.020 0.028 0.030 0.028 0.030 0.028 0.029 0.029 0.029 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.020 0.021 0.021 0.021 0.022 0.020 0.022 0.030 0.022 0.030 0.022 0.030 0.022 0.030 0.022 0.036 0.020 0.025 0.026 0.028 0.020 0.028 0.030 0.027 0.036 0.020 0.028 0.020 0.028 0.020 0.028 0.027 0.036 0.020 0.028 0.020 0.028 0.020 0.028 0.020 0.028 0.027 0.026 0.020 0.028 0.020 0.028 0.020 0.028 0.020 0.028 0.020 0.028 0.020 0.028 0.020 0.028 0.020 0.028 0.020 0.028 0.020 0.028 0.020 0.028 0.020 0.028 0.020 0.028 0.029 0.028 0	0.148 VARV-like 0.015 0.015 0.028 0.026 0.031 0.029 0.021 0.045 0.086 0.149 VARV-like VARV-like 0.015 0.028 0.012 0.015 0.029 0.015 0.029 0.021	0.149 TATV 0.009 0.031 0.029 0.034 0.033 0.015 0.047 0.087 0.151 TATV 0.087 0.015 0.009 0.031 0.028 0.009 0.031 0.028 0.009 0.031 0.028 0.009 0.031 0.028 0.009 0.031 0.028 0.009 0.031 0.028 0.009 0.031 0.028 0.033 0.033 0.033 0.033 0.033 0.033 0.033 0.033 0.033 0.033 0.033 0.033 0.033 0.034 0.035 0.047 0.03	0.150 B CMLV 0.034 0.031 0.037 0.035 0.018 0.049 0.089 0.152 D CMLV 0.089 0.152	0.149 ABATINO ABATINO 0.032 0.029 0.039 0.050 0.050 ABATINO ABATINO 0.150 ABATINO 0.087 0.150 ABATINO 0.087 0.150 ABATINO 0.087 0.021 0.032 0.02 0.032 0.021 0.032 0.02 0.032 0.021 0.032 0.02 0.032 0.02 0.032 0.02 0.03 0.03	0.151 MPXV 0.035 0.033 0.036 0.036 0.090 0.152 MPXV 0.090 0.152	0.150 ECTV 0.033 0.042 0.042 0.057 0.152 ECTV	0.149	0.152 VARV 0.054 0.093 0.154 VARV	0.150 AKMV 0.081 0.151 AKMV	0.153 AKPV 0.154 0.154	New World
New World VACV VACV-like CPXV-like1 CPXV-like2 VARV-like2 VARV-like TATV CMLV ABATINO MPXV ECTV ECTV-Abatino-like VARV AKPV New World VACV-like CPXV-like1 CPXV-like1 CPXV-like TATV CMLV ABATINO MPXV ECTV ECTV-Abatino-like CMLV ABATINO MPXV ECTV-IKE ECTV-I	0.150 VACV 0.015 0.019 0.026 0.019 0.023 0.026 0.030 0.024 0.032 0.030 0.024 0.032 0.030 0.024 0.031 0.049 0.049 0.049 0.049 0.049 0.049 0.049 0.049 0.049 0.049 0.049 0.025 0.019 0.022 0.025 0.030 0.023 0.023 0.030 0.022 0.025 0.030 0.022 0.025 0.030 0.021 0.026 0.030 0.031 0.049 0.026 0.030 0.031 0.049 0.026 0.030 0.024 0.030 0.024 0.030 0.024 0.030 0.024 0.030 0.024 0.030 0.024 0.030 0.024 0.030 0.024 0.030 0.024 0.030 0.024 0.030 0.024 0.030 0.024 0.030 0.024 0.030 0.024 0.030 0.024 0.030 0.024 0.030 0.024 0.030 0.024 0.030 0.024 0.030 0.025 0.030 0.025 0.030 0.026 0.030 0.024 0.030 0.024 0.030 0.024 0.030 0.024 0.030 0.024 0.030 0.025 0.014 0.025 0.030 0.022 0.030 0.022 0.030 0.022 0.030 0.022 0.030 0.022 0.030 0.022 0.030 0.022 0.030 0.022 0.030 0.023 0.025 0.030 0.023 0.023 0.030 0.022 0.030 0.023 0.030 0.023 0.030 0.023 0.030 0.023 0.030 0.023 0.030 0.023 0.031 0.023 0.031 0.031 0.023 0.031 0.031 0.031 0.032 0.030 0.031 0.032 0.031 0.0	0.148 VACV-like 0.017 0.023 0.016 0.020 0.022 0.022 0.027 0.028 0.047 0.086 0.047 VACV-like VACV-like 0.017 0.024 0.017 0.021 0.016 0.019 0.022 0.027 0.021 0.028 0.021 0.028 0.021 0.022 0.027 0.021 0.028 0.02 0.02	0.148 CPXV-like1 0.021 0.015 0.018 0.021 0.027 0.026 0.030 0.028 0.026 0.045 0.045 0.086 0.045 0.086 0.149 CPXV-like1 CPXV-like1 0.022 0.015 0.017 0.022 0.015 0.017 0.022 0.025 0.030 0.025 0.030	0.148 CPXV-like2 0.024 0.028 0.020 0.028 0.030 0.028 0.030 0.032 0.027 0.036 0.030 0.032 0.027 0.036 0.050 0.036 0.050 0.086 0.150 CPXV-like2 0.025 0.028 0.022 0.025 0.028 0.030 0.025 0.028 0.030 0.025 0.028 0.030 0.027 0.036 0.050 0.030 0.050 0.036 0.050 0.050 0.050 0.050 0.050 0.028 0.030 0.027 0.036 0.050 0.028 0.030 0.027 0.036 0.050 0.028 0.030 0.027 0.036 0.050 0.028 0.050 0.028 0.027 0.028 0.027 0.028 0.027 0.028 0.027 0.028 0.027 0.028 0.027 0.028 0.027 0.028 0.027 0.028 0.020 0.027 0.028 0.020 0.028 0.030 0.027 0.028 0.030 0.027 0.028 0.020 0.028 0.020 0.028 0.020 0.028 0.020 0.028 0.020 0.028 0.020 0.028 0.020 0.028 0.020 0.028 0.020 0.028 0.020 0.028 0.020 0.028 0.020 0.028 0.020 0.028 0.025 0.028 0.028 0.022 0.022 0.028 0.022 0.028 0.022 0.028 0.028 0.028 0.028 0.028 0.028 0.028 0.028 0.028 0.028 0.028 0.028 0.028 0.028 0.028 0.028 0.028 0.028 0.028 0.029 0.027 0.028 0.028 0.029 0.027 0.028 0.029 0.027 0.028 0.029 0.027 0.028 0.029 0.027 0.028 0.029 0.027 0.028 0.029 0.027 0.028 0.029 0.027 0.028 0.029 0.027 0.028 0.029 0.027 0.028 0.029 0.027 0.027 0.028 0.029 0.027 0.027 0.028 0.029 0.027 0.027 0.027 0.027 0.028 0.029 0.027 0.027 0.027 0.028 0.029 0.027	0.148 VARV-like 0.015 0.015 0.026 0.021 0.045 0.086 0.149 VARV-like VARV-like 0.01 0.015 0.029 0.021 0.015 0.029 0.021 0.015 0.029 0.026 0.030 0.00 0	0.149 TATV 0.009 0.031 0.029 0.034 0.033 0.015 0.047 0.087 0.151 TATV 0.087 0.051 0.009 0.031 0.028 0.009 0.031 0.028 0.033	0.150 B CMLV 0.034 0.031 0.037 0.035 0.018 0.049 0.089 0.089 CMLV CMLV CMLV 0.033 0.033 0.031 0.035 0.035	0.149 ABATINO ABATINO 0.032 0.029 0.039 0.050 0.087 0.150 ABATINO ABATINO 0.150	0.151 MPXV 0.035 0.033 0.036 0.054 0.090 0.152 MPXV MPXV 0.033 0.033 0.033	0.150 ECTV 0.033 0.042 0.049 0.049 0.087 0.152 ECTV	0.149	0.152 VARV	0.150 AKMV 0.081 0.151 AKMV	0.153 AKPV 0.154 0.154	New World
New World VACV-VACV-Iike CPXV-Iike1 CPXV-Iike2 VARV-Iike2 VARV-Iike TATV CMLV ABATINO MPXV ECTV-Abatino-Iike VARV AKMV AKPV New World VACV-V VACV-Vike2 VACV-Vike2 VACV-Vike2 VARV-Vike1 CPXV-Iike TATV CMLV ABATINO MPXV ECTV-Abatino-Iike VADV	0.150 VACV 0.015 0.019 0.026 0.019 0.023 0.026 0.030 0.024 0.032 0.030 0.031 0.049 0.049 0.049 0.049 0.049 0.049 0.049 0.049 0.0151 VACV VACV 0.015 0.030 0.031 0.026 0.019 0.025 0.030 0.025 0.030 0.023 0.025 0.030 0.023 0.026 0.030 0.026 0.030 0.031 0.049 0.026 0.031 0.049 0.026 0.031 0.049 0.026 0.031 0.049 0.026 0.031 0.049 0.026 0.031 0.049 0.026 0.031 0.049 0.026 0.030 0.049 0.026 0.030 0.031 0.049 0.026 0.030 0.049 0.026 0.030 0.024 0.030 0.031 0.049 0.026 0.030 0.026 0.030 0.031 0.049 0.026 0.030 0.026 0.030 0.031 0.049 0.026 0.026 0.030 0.026 0.030 0.024 0.032 0.030 0.026 0.031 0.026 0.031 0.026 0.026 0.030 0.024 0.032 0.030 0.026 0.031 0.026 0.026 0.031 0.026 0.026 0.031 0.026 0.026 0.026 0.026 0.026 0.026 0.031 0.026 0.026 0.026 0.026 0.026 0.026 0.026 0.025 0.030 0.023 0.033 0.025 0.030 0.023 0.033 0.023 0.033 0.023 0.023 0.033 0.023 0.033 0.023 0.033 0.023 0.033 0.023 0.035 0.03	0.148 VACV-like 0.017 0.023 0.016 0.022 0.026 0.021 0.029 0.027 0.028 0.047 VACV-like VACV-like 0.017 0.024 0.016 0.019 0.027 0.021 0.027 0.021 0.028 0.047	0.148 CPXV-like1 0.021 0.015 0.018 0.021 0.021 0.027 0.026 0.030 0.028 0.026 0.045 0.045 0.045 0.045 0.045 0.045 0.045 0.045 0.022 0.015 0.018 0.022 0.015 0.018 0.022 0.025 0.030 0.025 0.030 0.025 0.030 0.025 0.030 0.025 0.030 0.025 0.030 0.022 0.045 0.04	0.148 CPXV-like2 0.024 0.024 0.028 0.030 0.028 0.030 0.032 0.027 0.036 0.050 0.086 0.150 CPXV-like2 0.025 0.028 0.028 0.028 0.028 0.028 0.029 0.031 0.027 0.024 0.02 0.02	0.148 VARV-like 0.012 0.015 0.028 0.026 0.031 0.029 0.021 0.045 0.045 0.045 0.045 0.045 0.045 0.045 0.045 0.045 0.045 0.045 0.045 0.045 0.045 0.029 0.021 0.015 0.029 0.026 0.030 0.03 0.030 0.04 0.04	0.149 TATV 0.009 0.031 0.029 0.034 0.033 0.015 0.047 0.047 0.087 0.151 TATV 0.087 0.151 0.047 0.087 0.015 0.009 0.031 0.028 0.033 0.028 0.033 0.028 0.033 0.028 0.033 0.028 0.033 0.028 0.033 0.028 0.033 0.028 0.034 0.033 0.029 0.034 0.047 0.04	0.150 B CMLV 0.034 0.031 0.037 0.035 0.049 0.049 0.049 0.089 0.152 D CMLV 0.033 0.033 0.031 0.035 0.033 0.031 0.035	0.149 ABATINO ABATINO 0.032 0.032 0.029 0.030 0.050 0.087 0.150 ABATINO ABATINO 0.032 0.03 0.03	0.151 MPXV 0.035 0.035 0.033 0.036 0.054 0.090 0.152 MPXV 0.090 0.152 0.033 0.033 0.033 0.033 0.033	0.150 ECTV 0.033 0.042 0.049 0.049 0.049 0.087 0.152 ECTV	0.149  IV-Abatino-  IV-Abatino-  0.040 0.053 0.087 0.151  IV-Abatino-  IV-Abatino-  IV-Abatino- IV-IV-Abatino- IV-Abatino- IV-Abatino- IV-Abatino- IV-IV-IV-IV-IV-IV-IV-IV-IV-IV-IV-IV-IV-I	0.152 VARV	0.150 AKMV 0.081 0.151 AKMV 0.081 0.151	0.153 AKPV 0.154 0.154 AKPV	New World
New World VACV VACV VACV-like CPXV-like CPXV-like CPXV-like CPXV-like CMLV ABATINO MPXV ECTV ECTV-Abatino-like VARV AKMV AKMV AKMV VACV-like CPXV-like CPXV-like TATV CMLV ABATINO MPXV ECTV ECTV-ECTV-ECTV-ECTV-ECTV-ECTV-ECTV-ECTV-	0.150 VACV 0.015 0.019 0.026 0.019 0.023 0.026 0.030 0.024 0.030 0.024 0.030 0.031 0.049 0.088 0.151 VACV VACV 0.019 0.026 0.030 0.031 0.026 0.019 0.022 0.026 0.019 0.023 0.031 0.024 0.031 0.024 0.031 0.025 0.033 0.031 0.025 0.033 0.031 0.025 0.033 0.026 0.031 0.024 0.031 0.026 0.031 0.031 0.026 0.031 0.024 0.031 0.026 0.031 0.024 0.032 0.031 0.049 0.025 0.031 0.026 0.031 0.026 0.031 0.024 0.032 0.031 0.026 0.031 0.024 0.032 0.031 0.026 0.031 0.026 0.033 0.031 0.026 0.031 0.026 0.031 0.026 0.032 0.031 0.026 0.031 0.026 0.031 0.026 0.031 0.026 0.031 0.026 0.031 0.026 0.031 0.026 0.031 0.026 0.031 0.026 0.031 0.026 0.031 0.026 0.031 0.026 0.031 0.026 0.031 0.026 0.031 0.026 0.031 0.026 0.031 0.025 0.033 0.033 0.033 0.025 0.033 0.033 0.033 0.032 0.033 0.032 0.032 0.032 0.032 0.032 0.032 0.032 0.033 0.033 0.033 0.033 0.033 0.033 0.033 0.033 0.033 0.033 0.033 0.033 0.033 0.031 0.031 0.031 0.031 0.033 0.031	0.148 VACV-like 0.017 0.023 0.016 0.020 0.022 0.026 0.021 0.029 0.027 0.028 0.028 0.049 VACV-like 0.017 0.024 0.016 0.019 0.022 0.027 0.028 0.021 0.028 0.028 0.028 0.028 0.028 0.028 0.028 0.028 0.028 0.028 0.026 0.026	0.148 CPXV-like1 0.021 0.015 0.018 0.027 0.026 0.030 0.028 0.026 0.030 0.028 0.026 0.030 0.028 0.026 0.030 0.028 0.026 0.030 0.022 0.015 0.018 0.022 0.015 0.018 0.022 0.025 0.025 0.030 0.025 0.025 0.030 0.025 0.025 0.030 0.025 0.025 0.030 0.025 0.025 0.021 0.025 0.021 0.022 0.022 0.022 0.025 0.022 0.022 0.025 0.05	0.148 CPXV-like2 0.024 0.028 0.028 0.028 0.027 0.036 0.027 0.036 0.086 0.150 CPXV-like2 0.025 0.028 0.028 0.022 0.028 0.020 0.028 0.020 0.028 0.030 0.028 0.028 0.030 0.028 0.027 0.028 0.027 0.031 0.027 0.034	0.148 VARV-like 0.012 0.015 0.028 0.026 0.031 0.029 0.021 0.021 0.086 0.149 VARV-like 0.086 0.149 VARV-like 0.012 0.015 0.026 0.030 0.015 0.026 0.030 0.030 0.019 0.021 0.015	0.149 TATV 0.009 0.031 0.029 0.034 0.033 0.047 0.151 TATV 0.087 0.151 TATV 0.09 0.09 0.031 0.028 0.033 0.028 0.033 0.028 0.033 0.028 0.033 0.028 0.033 0.028 0.033 0.028 0.033 0.028 0.033 0.028 0.033 0.028 0.033 0.028 0.033 0.029 0.031 0.029 0.034 0.047 0.051 0.047 0.051 0.047 0.051 0.047 0.051 0.047 0.051 0.047 0.051 0.047 0.051 0.047 0.051 0.047 0.051 0.047 0.051 0.047 0.051 0.047 0.051 0.047 0.051 0.047 0.051 0.047 0.051 0.047 0.051 0.047 0.033 0.055 0.031 0.029 0.031 0.047 0.057	0.150 B CMLV 0.034 0.031 0.037 0.035 0.018 0.049 0.089 0.152 D CMLV CMLV	0.149 ABATINO ABATINO ABATINO ABATINO ADD ADD ADD ADD ADD ADD ADD ADD ADD AD	0.151 MPXV 0.035 0.033 0.036 0.054 0.090 0.152 MPXV 0.033 0.033 0.033 0.033 0.033 0.033	0.150 ECTV 0.033 0.042 0.042 0.049 0.087 0.152 ECTV	0.149	0.152 VARV 0.054 0.093 0.154 VARV	0.150 AKMV 0.151 0.081 0.151 AKMV 0.151	0.153 AKPV 0.154 0.154	New World           -
New World VACV VACV-like CPXV-like1 CPXV-like2 VARV-like2 VARV-like TATV CMLVV ABATINO MPXV ECTV ECTV-Abatino-like VARV AKPV New World VACV VACV-like1 CPXV-like2 VARV-like1 CPXV-like2 VARV-like2 VAR	0.150 VACV 0.015 0.019 0.026 0.019 0.023 0.020 0.030 0.024 0.032 0.030 0.031 0.049 0.088 0.151 VACV VACV 0.014 0.019 0.026 0.030 0.031 0.022 0.025 0.030 0.031 0.023 0.031 0.023 0.031 0.023 0.031 0.022 0.025 0.030 0.031 0.025 0.030 0.031 0.022 0.025 0.030 0.022 0.025 0.030 0.023 0.024 0.031 0.024 0.031 0.024 0.031 0.024 0.031 0.024 0.031 0.024 0.031 0.024 0.030 0.031 0.025 0.030 0.031 0.025 0.030 0.025 0.030 0.025 0.030 0.025 0.025 0.030 0.022 0.025 0.030 0.022 0.025 0.030 0.022 0.025 0.030 0.022 0.022 0.025 0.030 0.022 0.025 0.030 0.022 0.025 0.023 0.022 0.025 0.030 0.022 0.025 0.030 0.024 0.025 0.025 0.025 0.030 0.022 0.025 0.030 0.023 0.025 0.030 0.022 0.025 0.030 0.023 0.025 0.030 0.023 0.023 0.025 0.030 0.023 0.031 0.025 0.025 0.030 0.023 0.031 0.025 0.030 0.023 0.031 0.025 0.030 0.023 0.031 0.023 0.031 0.023 0.031 0.023 0.031 0.023 0.031 0.023 0.031 0.031 0.023 0.031 0.024 0.031 0.024 0.031 0.024 0.031 0.031 0.031 0.031 0.028 0.049 0.024 0.024 0.031 0.024 0.031 0.024 0.031 0.024 0.024 0.031 0.024 0.031 0.024 0.024 0.031 0.024 0.024 0.031 0.024 0.024 0.025 0.031 0.024 0.024 0.024 0.031 0.024 0.049 0.024 0.025 0.031 0.024 0.049	0.148 VACV-like 0.017 0.023 0.016 0.020 0.022 0.022 0.022 0.027 0.028 0.047 0.086 0.149 VACV-like VACV-like 0.017 0.024 0.016 0.019 0.022 0.027 0.021 0.022 0.027 0.021 0.028 0.028 0.028 0.028 0.028 0.028 0.026 0.046 0.046	0.148 CPXV-like1 0.021 0.015 0.018 0.027 0.026 0.030 0.028 0.026 0.045 0.045 0.086 0.149 CPXV-like1 CPXV-like1 0.022 0.015 0.017 0.022 0.015 0.017 0.022 0.015 0.017 0.022 0.025 0.030 0.029 0.024 0.044	0.148 CPXV-like2 0.024 0.028 0.028 0.028 0.028 0.028 0.027 0.036 0.050 0.050 0.050 0.050 0.050 0.050 0.025 0.028 0.022 0.025 0.028 0.020 0.025 0.028 0.020 0.025 0.028 0.020 0.025 0.028 0.020 0.025 0.028 0.020 0.025 0.028 0.020 0.025 0.028 0.020 0.025 0.028 0.020 0.020 0.028 0.030 0.027 0.036 0.050 0.050 0.028 0.050 0.050 0.028 0.027 0.036 0.050 0.050 0.028 0.020 0.028 0.027 0.036 0.050 0.050 0.028 0.027 0.026 0.028 0.020 0.028 0.027 0.036 0.050 0.050 0.028 0.027 0.026 0.020 0.028 0.020 0.027 0.036 0.050 0.028 0.027 0.028 0.020 0.027 0.026 0.050 0.027 0.028 0.027 0.026 0.027 0.026 0.020 0.027 0.036 0.050 0.027 0.028 0.027 0.027 0.028 0.027 0.026 0.027 0.028 0.027 0.028 0.027 0.028 0.027 0.028 0.027 0.028 0.027 0.028 0.027 0.028 0.028 0.028 0.028 0.028 0.028 0.028 0.028 0.028 0.028 0.028 0.028 0.029 0.027 0.027 0.027 0.027 0.027 0.027 0.027 0.027 0.027 0.027 0.027 0.027 0.027 0.027 0.027 0.027 0.034 0.050 0.050 0.050 0.050 0.050 0.050 0.027 0.027 0.034 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.050 0.027 0.034 0.050 0.05	0.148 VARV-like 0.015 0.015 0.028 0.026 0.031 0.029 0.021 0.045 VARV-like 0.086 0.149 VARV-like 0.086 0.149 0.015 0.029 0.015 0.029 0.015 0.029 0.021 0.015 0.029 0.026 0.030 0.030 0.030 0.019 0.045	0.149 TATV 0.009 0.031 0.029 0.034 0.033 0.015 0.047 0.087 0.05 0.047 0.087 0.05 0.047 0.015 0.047 0.033 0.015 0.009 0.031 0.028 0.009 0.033 0.014 0.046	0.150 B CMLV 0.034 0.031 0.037 0.035 0.018 0.049 0.089 0.152 D CMLV 0.08 0.033 0.033 0.033 0.035 0.036 0.036 0.036 0.036 0.036 0.036 0.036 0.037 0.035 0.033 0.035 0.035 0.035 0.035 0.033 0.035 0.036 0.035 0.036 0.035 0.036 0.048 0.048 0.048 0.056 0.048 0.056	0.149 ABATINO ABATINO O O O O O O O O O O O O O O O O O O	0.151 MPXV 0.035 0.033 0.036 0.054 0.090 0.152 MPXV MPXV 0.033 0.033 0.033 0.033 0.033 0.034 0.053	0.150 ECTV 0.033 0.042 0.042 0.042 0.042 0.042 0.057 0.152 ECTV	0.149	0.152 VARV 0.054 0.093 0.154 VARV 0.052	0.150 AKMV 0.151 0.081 0.151 AKMV 0.081 0.151 0.081 0.15 0.081 0.15 0.081 0.15 0.081 0.15 0.081 0.15 0.081 0.15 0.081 0.15 0.081 0.15 0.081 0.15 0.081 0.15 0.081 0.15 0.081 0.15 0.081 0.15 0.081 0.15 0.081 0.15 0.081 0.15 0.081 0.15 0.08 0.081 0.15 0.08 0.08 0.08 0.08 0.08 0.08 0.08 0.0	0.153 AKPV 0.154 0.154	New World
New World VACV VACV-like CPXV-like1 CPXV-like2 VARV-like2 VARV-like TATV CMLV AKNV AKPV CVV VACV-like CPXV-like1 CPXV-like1 CPXV-like2 CPXV-like3 TATV CMLV ABATTNO MPXV ECTV-Abatino-like VARV AKMV AKMV AKMV AKMV AKMV AKMV AKMV AKM	0.150 VACV 0.015 0.019 0.026 0.019 0.023 0.026 0.030 0.024 0.030 0.024 0.030 0.024 0.030 0.024 0.030 0.024 0.031 0.049 0.014 0.019 0.019 0.025 0.030 0.022 0.025 0.031 0.023 0.031 0.023 0.023 0.023 0.023 0.023 0.022 0.025 0.030 0.023 0.024 0.019 0.024 0.030 0.024 0.030 0.024 0.030 0.024 0.030 0.024 0.030 0.024 0.030 0.024 0.030 0.024 0.030 0.024 0.030 0.024 0.030 0.024 0.025 0.030 0.025 0.019 0.025 0.019 0.025 0.019 0.025 0.019 0.025 0.022 0.022 0.022 0.022 0.022 0.022 0.022 0.022 0.022 0.022 0.022 0.030 0.024 0.019 0.024 0.030 0.024 0.030 0.024 0.030 0.024 0.030 0.024 0.030 0.024 0.030 0.024 0.030 0.024 0.025 0.019 0.022 0.025 0.030 0.023 0.023 0.022 0.025 0.030 0.023 0.023 0.022 0.025 0.030 0.023 0.023 0.023 0.023 0.023 0.023 0.023 0.023 0.023 0.023 0.023 0.023 0.023 0.023 0.023 0.028 0.088 0.0	0.148 VACV-like 0.017 0.023 0.016 0.020 0.022 0.022 0.027 0.028 0.047 0.086 0.149 VACV-like VACV-like 0.017 0.024 0.017 0.024 0.016 0.019 0.022 0.027 0.021 0.028 0.026 0.026 0.026 0.046 0.086	0.148 CPXV-like1 0.021 0.015 0.018 0.027 0.026 0.030 0.028 0.026 0.045 0.086 0.149 CPXV-like1 	0.148 CPXV-like2 0.024 0.028 0.030 0.028 0.030 0.027 0.036 0.030 0.032 0.027 0.036 0.050 0.086 0.150 CPXV-like2 CPXV-like2 0.025 0.028 0.025 0.028 0.029 0.031 0.027 0.034 0.027 0.034 0.028 0.029 0.031 0.027 0.034 0.029 0.031 0.027 0.034 0.028 0.028 0.028 0.030 0.025 0.028 0.030 0.028 0.030 0.025 0.028 0.030 0.028 0.030 0.025 0.028 0.030 0.028 0.028 0.028 0.028 0.028 0.028 0.028 0.028 0.028 0.028 0.029 0.031 0.034 0.035 0.034 0.035 0.035 0.034 0.034 0.034 0.034 0.035 0.035 0.034 0.035 0.034 0.035 0.035 0.034 0.035 0	0.148 VARV-like 0.015 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.0	0.149 TATV 0.009 0.031 0.029 0.034 0.033 0.015 0.047 0.087 TATV 0.087 0.009 0.031 0.029 0.034 0.033 0.028 0.033 0.033 0.033 0.033 0.014 0.046 0.087	0.150 B CMLV 0.034 0.031 0.037 0.035 0.018 0.049 0.089 0.089 CMLV CMLV CMLV 0.033 0.033 0.033 0.035 0.036 0.048 0.090	0.149 ABATINO ABATINO O O O O O O O O O O O O O O O O O O	0.151 MPXV 0.035 0.035 0.033 0.036 0.054 0.090 0.152 MPXV 0.054 0.090 0.152 0.033 0.034 0.033 0.033 0.034 0.053 0.090	0.150 ECTV 0.033 0.042 0.049 0.087 0.152 ECTV ECTV	0.149	0.152 VARV 0.054 0.093 0.154 VARV VARV	0.150 AKMV 0.081 0.081 0.081	0.153 AKPV 0.154 0.154	New World           -

**Table S8.** Patristic and genetic distances within CPXV clusters calculated from the Maximum likelihood (ML) and Bayesian inference (BI) trees of 62 conserved genes, 87 OPXV core genomes, whole genomes and orthologous genes and their alignments, respectively.

			Ι	Patristic distance:	S		
Cluster	ML tree of 62 conserved genes	BI tree of 62 conserved genes	ML tree of 87 OPXV whole genomes	BI tree of 87 OPXV whole genomes	ML tree of 87 OPXV core genomes	BI tree of 87 OPXV core genomes	ML tree of OPXV orthologous genes
VACV-like	0.018	0.017	0.018	0.018	0.018	0.017	0.017
CPXV-like1	0.016	0.016	0.015	0.015	0.015	0.015	0.015
CPXV-like2	0.022	0.022	0.023	0.023	0.023	0.023	0.025
VARV-like	0.000	0.000	0.001	0.001	0.001	0.001	0.001
ECTV-Abatino like	0.012	0.012	0.016	0.016	0.016	0.016	0.016
TATV - CMLV	0.011	0.011	0.012	0.012	0.012	0.012	0.013
TATV-VARV	0.018	0.018	0.019	0.019	0.021	0.020	0.018

TATV: Taterapox virus, CMLV:Camelpox virus, VARV: Variola virus

		Genetic o	listances	
Cluster	62 conserved genes	87 OPXV whole genomes	87 OPXV core genomes	OPXV orthologous genes
VACV-like	0.010	0.012	0.012	0.011
CPXV-like1	0.008	0.008	0.008	0.008
CPXV-like2	0.012	0.013	0.013	0.014
VARV-like	0.000	0.000	0.000	0.001
ECTV-Abatino like	0.008	0.012	0.011	0.011
TATV - CMLV	0.008	0.009	0.009	0.009
TATV-VARV	0.012	0.014	0.015	0.014

TATV: Taterapox virus, CMLV:Camelpox virus, VARV: Variola virus

								ML tree	of 62 conserve	ed genes										
	1	8	9	1	0			11				7		5	4	6	3		2	
	CDNAL C. 1	CPXV_Fra2	CDVULE A	CDVULD 1	CPXV_Catp	ODVUL N	CPXV_Nor1	CDV/U N	CIDITAL N	CPXV_Nor	CPXV_Che	CDVAL C	CDVAL C	CDV/U C 1	CPXV_Ger2	CPXV_Hum	CPXV_Ger2	CDNAL C. O	CPXV_Ger2	CDVUL EN 10
	CPXV_GerI	001_Nancy_	CPXV_FraA	CPXV_Br_1	ox5wv1_198	CPXV_N0_	994_Man_19	CPXV_N0_	CPXV_N0_	wayFeline_19	Nova_DK_2	CPXV_Swe_	CPXV_Swe_	CPXV_Gerl	015_Cat1_2	Lue09_1_20	014_Human_	CPXV_Ger9	007_Vole_20	CPXV_FM2
	998_2_1998	2001	mens_2016	957	2	F2_1999	94	HI_1994	F1_1994	94	014	H2_1990	HI_1990	990_2_1990	015	09	2014	1_1991	07	292_2011
1 CPXV_Ger1998_2_1998																				
8 CPXV_Fra2001_Nancy_2001	0.026																			
9 CPXV_FraAmiens_2016	0.027	0.014																		
CPXV_Br_1937	0.032	0.023	0.024																	
10 CPXV_Catpox5wv1_1982	0.032	0.023	0.024	0.007															1	
CPXV_No_F2_1999	0.031	0.022	0.022	0.018	0.018															
CPXV_Nor1994_Man_1994	0.031	0.022	0.023	0.019	0.018	0.000														
CPXV_No_H1_1994	0.031	0.022	0.023	0.019	0.018	0.000	0.000												ļ	
CPXV_No_F1_1994	0.031	0.022	0.022	0.019	0.018	0.003	0.003	0.003											ļ	
11 CPXV_NorwayFeline_1994	0.031	0.022	0.022	0.019	0.018	0.003	0.003	0.003	0.000										ļ	
CPXV_CheNova_DK_2014	0.028	0.019	0.020	0.021	0.021	0.020	0.020	0.020	0.020	0.020									ļ	
CPXV_Swe_H2_1990	0.028	0.019	0.020	0.021	0.020	0.019	0.019	0.019	0.019	0.019	0.007								ļ	
7 CPXV_Swe_H1_1990	0.028	0.019	0.020	0.020	0.020	0.019	0.019	0.019	0.019	0.019	0.007	0.000							ļ	
5 CPXV_Ger1990_2_1990	0.026	0.019	0.020	0.025	0.025	0.024	0.024	0.024	0.024	0.024	0.022	0.021	0.021						ļ	
4 CPXV_Ger2015_Cat1_2015	0.026	0.020	0.021	0.026	0.025	0.024	0.024	0.024	0.024	0.024	0.022	0.022	0.021	0.012					ļ	
6 CPXV_HumLue09_1_2009	0.024	0.018	0.019	0.024	0.023	0.022	0.022	0.022	0.022	0.022	0.020	0.019	0.019	0.014	0.015					
3 CPXV_Ger2014_Human_2014	0.021	0.026	0.027	0.032	0.032	0.030	0.031	0.031	0.031	0.031	0.028	0.028	0.028	0.026	0.026	0.024				
CPXV_Ger91_1991	0.018	0.023	0.024	0.029	0.028	0.027	0.027	0.027	0.027	0.027	0.025	0.024	0.024	0.022	0.023	0.021	0.007		ļ	
CPXV_Ger2007_Vole_2007	0.022	0.027	0.028	0.033	0.032	0.031	0.031	0.031	0.031	0.031	0.029	0.029	0.029	0.026	0.027	0.025	0.016	0.013	ļ	
2 CPXV_FM2292_2011	0.021	0.026	0.027	0.032	0.032	0.030	0.031	0.031	0.030	0.030	0.028	0.028	0.028	0.026	0.026	0.024	0.015	0.012	0.009	
				-				BI tree	of 62 conserve	ed genes										
		2		3	6	5	1	0			11				7		9	8	4	1
	CPXV FM2	CPXV_Ger2	CPXV Ger9	CPXV_Ger2	CPXV_Hum	CPXV Ger1	CPXV Br 1	CPXV_Catp	CPXV_Nor1	CPXV No	CPXV No	CPXV_Nor	CPXV No	CPXV_Che	CPXV Swe	CPXV Swe	CPXV FraA	CPXV_Fra2	CPXV_Ger2	CPXV Ger1
	292 2011	007_Vole_20	1 1991	014_Human_	Lue09_1_20	990 2 1990	937	ox5wv1_198	994_Man_19	H1 1994	F2 1999	wayFeline_19	F1 1994	Nova_DK_2	H1 1990	H2 1990	miens 2016	001_Nancy_	015_Cat1_2	998 2 1998
		07		2014	09			2	94			94		014				2001	015	
CPXV_FM2292_2011	_																			
2 CPXV_Ger2007_Vole_2007	0.0086																			
CPXV_Ger91_1991	0.0118	0.0127																		
3 CPXV_Ger2014_Human_2014	0.0150	0.0159	0.0071																	
6 CPXV_HumLue09_1_2009	1 0 0 25 4		0.0071																	
A ODITI O 1000 A 1000	0.0234	0.0263	0.0222	0.0254	0.0101															
5 CPXV_Ger1990_2_1990	0.0234	0.0263	0.0222	0.0254	0.0121	0.0226														
5 CPXV_Ger1990_2_1990 10 CPXV_Br_1937 10 CPXV_C = 1 1002	0.0253 0.0331 0.0220	0.0263 0.0262 0.0340	0.0222 0.0222 0.0299	0.0254 0.0254 0.0331	0.0121	0.0236	0.0072													
5 CPXV_Ger1990_2_1990 10 CPXV_Br_1937 CPXV_Catpox5wv1_1982 CPXV_N=1004_Mer_1004	0.0234 0.0253 0.0331 0.0328	0.0263 0.0262 0.0340 0.0337	0.0222 0.0222 0.0299 0.0296	0.0254 0.0254 0.0331 0.0328	0.0121 0.0237 0.0234	0.0236	0.0073	0.0192												
5 CPXV_Ger1990_2_1990 10 CPXV_Br_1937 CPXV_Catpox5wv1_1982 CPXV_Nor1994_Man_1994 CPXV_No_H11_1004	0.0234 0.0253 0.0331 0.0328 0.0319	0.0263 0.0262 0.0340 0.0337 0.0328	0.0222 0.0222 0.0299 0.0296 0.0287	0.0254 0.0254 0.0331 0.0328 0.0319	0.0121 0.0237 0.0234 0.0225	0.0236 0.0233 0.0224	0.0073	0.0182	0.0000											
5 CPXV_Ger1990_2_1990 10 CPXV_Br_1937 CPXV_catpox5wv1_1982 CPXV_Nor1994_Man_1994 CPXV_No_H1_1994 UPXV_No_H1_1994 CPXV_No_H1_1994 CPXV_No_H1_1994 CPXV_No_H1_1994 CPXV_NO_H1_19	0.0234 0.0253 0.0331 0.0328 0.0319 0.0319	0.0263 0.0262 0.0340 0.0337 0.0328 0.0328	0.0222 0.0222 0.0299 0.0296 0.0287 0.0287	0.0254 0.0254 0.0331 0.0328 0.0319 0.0319	0.0121 0.0237 0.0234 0.0225 0.0225	0.0236 0.0233 0.0224 0.0224	0.0073 0.0185 0.0185	0.0182	0.0000	0.0002										
5 CPXV_Ger1990_2_1990 10 CPXV_Br_1937 CPXV_Catpox5wv1_1982 CPXV_Nor1994_Man_1994 CPXV_No_F1_1994 11 CPXV_No_F2_1999 CPXV_No_F5_1999	0.0234 0.0253 0.0331 0.0328 0.0319 0.0319 0.0317	0.0263 0.0262 0.0340 0.0337 0.0328 0.0328 0.0326	0.0071 0.0222 0.0222 0.0299 0.0296 0.0287 0.0287 0.0285	0.0254 0.0254 0.0331 0.0328 0.0319 0.0319 0.0318	0.0121 0.0237 0.0234 0.0225 0.0225 0.0223	0.0236 0.0233 0.0224 0.0224 0.0223	0.0073 0.0185 0.0185 0.0183	0.0182 0.0182 0.0180	0.0000	0.0003	0.0020									
5 CPXV_Ger1990_2_1990 10 CPXV_Br_1937 CPXV_CatpoSwv1_1982 CPXV_Nor1994_Man_1994 CPXV_No_H1_1994 11 CPXV_No_F2_1999 CPXV_NorwayFelme_1994 CPXV_NorWayFelme_1994 CPXV_No_F1_1004	0.0234 0.0253 0.0331 0.0328 0.0319 0.0319 0.0317 0.0318	0.0263 0.0262 0.0340 0.0337 0.0328 0.0328 0.0326 0.0327 0.0327	0.0222 0.0222 0.0299 0.0296 0.0287 0.0287 0.0285 0.0286	0.0254 0.0254 0.0331 0.0328 0.0319 0.0319 0.0318 0.0318	0.0121 0.0237 0.0234 0.0225 0.0225 0.0223 0.0223 0.0224	0.0236 0.0233 0.0224 0.0224 0.0223 0.0223 0.0223	0.0073 0.0185 0.0185 0.0183 0.0184 0.0184	0.0182 0.0182 0.0180 0.0181	0.0000 0.0003 0.0030 0.0030	0.0003	0.0028	0.0000								
5         CPXV_Gerl990_2_1990           10         CPXV_Br_1937           CPXV_Catpox5wvl_1982         CPXV_Anpox5wvl_1982           CPXV_Nor1994_Man_1994         CPXV_No_F1_1994           11         CPXV_No_F2_1999           CPXV_NorF2_1999         CPXV_NorwayFeline_1994           CPXV_No_F1_1994         CPXV_No_F1_1994	0.0234 0.0253 0.0331 0.0328 0.0319 0.0319 0.0319 0.0317 0.0318 0.0318	0.0263 0.0262 0.0340 0.0337 0.0328 0.0328 0.0326 0.0327 0.0327 0.0327	0.0222 0.0222 0.0222 0.0299 0.0299 0.0296 0.0287 0.0287 0.0285 0.0286 0.0286	0.0254 0.0254 0.0331 0.0328 0.0319 0.0319 0.0318 0.0318 0.0318	0.0121 0.0237 0.0234 0.0225 0.0225 0.0223 0.0224 0.0224	0.0236 0.0233 0.0224 0.0223 0.0223 0.0223 0.0223 0.0223	0.0073 0.0185 0.0185 0.0183 0.0184 0.0184	0.0182 0.0182 0.0180 0.0181 0.0181	0.0000 0.0003 0.0030 0.0030 0.0030	0.0003 0.0030 0.0030 0.0105	0.0028	0.0000	0.0104							
5         CPXV_Ger1990_2_1990           10         CPXV_Br_1937           10         CPXV_Catpox5wvl_1982           CPXV_Nor1994_Man_1994         CPXV_Nor1994_Man_1994           11         CPXV_No_F1_1994           11         CPXV_No_F2_1999           CPXV_No_F1_1994         CPXV_No_F1_1994           7         CPXV_CheNova_DK_2014           7         CPXV_Sm_H1_1000	0.0294 0.0253 0.0311 0.0328 0.0319 0.0319 0.0317 0.0318 0.0318 0.0294	0.0263 0.0262 0.0340 0.0337 0.0328 0.0328 0.0326 0.0327 0.0327 0.0327 0.0303	0.0222 0.0222 0.0222 0.0299 0.0296 0.0287 0.0287 0.0285 0.0286 0.0286 0.0262	0.0254 0.0254 0.0331 0.0328 0.0319 0.0319 0.0318 0.0318 0.0318 0.0294	0.0121 0.0237 0.0234 0.0225 0.0225 0.0223 0.0224 0.0224 0.0224	0.0236 0.0233 0.0224 0.0224 0.0223 0.0223 0.0223 0.0223 0.0199	0.0073 0.0185 0.0185 0.0183 0.0184 0.0184 0.0184 0.0207	0.0182 0.0182 0.0180 0.0181 0.0181 0.0181 0.0204	0.0000 0.0003 0.0030 0.0030 0.0195 0.0195	0.0003 0.0030 0.0030 0.0195	0.0028 0.0028 0.0194 0.0192	0.0000	0.0194	0.0062						
5         CPXV_Gerl990_2_1990           10         CPXV_Br_1937           CPXV_CatpooSwv1_1982           CPXV_No_IP194_Man_1994           CPXV_No_F1_1994           CPXV_No_F2_1999           CPXV_NowayFeline_1994           CPXV_No_F1_1994           CPXV_No_F1_1994           CPXV_No_F1_1994           CPXV_No_F1_1994           CPXV_No_F1_1994	0.0253 0.0331 0.0328 0.0319 0.0319 0.0319 0.0319 0.0317 0.0318 0.0294 0.0288	0.0263 0.0262 0.0340 0.0337 0.0328 0.0328 0.0326 0.0327 0.0327 0.0327 0.0303 0.0297	0.0222 0.0222 0.0229 0.0299 0.0296 0.0287 0.0287 0.0285 0.0286 0.0286 0.0286 0.0262 0.0257	0.0254 0.0254 0.0331 0.0328 0.0319 0.0319 0.0318 0.0318 0.0318 0.0318 0.0294 0.0299	0.0121 0.0237 0.0234 0.0225 0.0225 0.0223 0.0224 0.0224 0.0224 0.0224 0.0200 0.0194	0.0236 0.0233 0.0224 0.0223 0.0223 0.0223 0.0223 0.0199 0.0194	0.0073 0.0185 0.0185 0.0183 0.0184 0.0184 0.0207 0.0202 0.0202	0.0182 0.0182 0.0180 0.0181 0.0181 0.0204 0.0199	0.0000 0.0003 0.0030 0.0195 0.0190	0.0003 0.0030 0.0030 0.0195 0.0190 0.0191	0.0028 0.0028 0.0194 0.0188 0.0189	0.0000 0.0194 0.0189 0.0100	0.0194	0.0068	0.0004					
5         CPXV_Ger1990_2_1990           10         CPXV_Br_1937           CPXV_CatpooSwv1_1982           CPXV_Nor1994_Man_1994           CPXV_No_F1_1994           11         CPXV_No_F2_1999           CPXV_NorwayFeline_1994           CPXV_No_F1_1994           CPXV_No_F1_1994           CPXV_Swe_H1_1990           CPXV_Swe_H1_1990           CPXV_Swe_H2_1990           CPXV_Swe_H0_1990           CPXV_Featpings_2016	0.0253 0.0331 0.0328 0.0319 0.0319 0.0319 0.0319 0.0317 0.0318 0.0294 0.0288 0.0289 0.0281	0.0263 0.0262 0.0340 0.0337 0.0328 0.0328 0.0326 0.0327 0.0327 0.0327 0.0303 0.0297 0.0298 0.0298	0.0222 0.0222 0.0299 0.0296 0.0287 0.0287 0.0285 0.0286 0.0286 0.0286 0.0262 0.0257 0.0258	0.0254 0.0254 0.0331 0.0328 0.0319 0.0319 0.0318 0.0318 0.0318 0.0294 0.0289 0.0290	0.0121 0.0237 0.0234 0.0225 0.0225 0.0223 0.0224 0.0224 0.0224 0.0200 0.0194 0.0195	0.0236 0.0233 0.0224 0.0223 0.0223 0.0223 0.0223 0.0199 0.0194 0.0195 0.0186	0.0073 0.0185 0.0185 0.0183 0.0184 0.0184 0.0207 0.0202 0.0203 0.0203	0.0182 0.0182 0.0180 0.0181 0.0204 0.0199 0.0200 0.0202	0.0000 0.0003 0.0030 0.0195 0.0190 0.0191 0.0223	0.0003 0.0030 0.0030 0.0195 0.0190 0.0191 0.0222	0.0028 0.0028 0.0194 0.0188 0.0189	0.0000 0.0194 0.0189 0.0190 0.0222	0.0194 0.0189 0.0190	0.0068	0.0004	0.0194				
5         CPXV_Ger1990_2_1990           10         CPXV_Br_1937           CPXV_CatpoxSwv1_1982         CPXV_CatpoxSwv1_1982           CPXV_Nor1994_Man_1994         CPXV_No_F12_1994           11         CPXV_No_F2_1999           CPXV_NorwayFelme_1994         CPXV_No_F1_1994           CPXV_NorwayFelme_1994         CPXV_NorwayFelme_1994           CPXV_NorWayFelme_1994         CPXV_No_F1_1994           CPXV_Swe_H1_1990         CPXV_Swe_H1_1990           CPXV_Swe_H1_1990         CPXV_FraAmines_2016           8         CPXV_FraAmines_2016	0.0234 0.0253 0.0331 0.0328 0.0319 0.0319 0.0319 0.0317 0.0318 0.0294 0.0288 0.0289 0.0289 0.0281	0.0263 0.0262 0.0340 0.0337 0.0328 0.0328 0.0327 0.0327 0.0327 0.0303 0.0297 0.0298 0.0290	0.0222 0.0222 0.0299 0.0296 0.0287 0.0287 0.0285 0.0286 0.0286 0.0286 0.02286 0.02286 0.02257 0.0257 0.0258 0.0249	0.0254 0.0254 0.0331 0.0328 0.0319 0.0319 0.0318 0.0318 0.0294 0.0294 0.0289 0.0290 0.0281	0.0121 0.0237 0.0234 0.0225 0.0225 0.0223 0.0224 0.0224 0.0224 0.0200 0.0194 0.0195 0.0187	0.0236 0.0233 0.0224 0.0224 0.0223 0.0223 0.0223 0.0199 0.0194 0.0195 0.0186 0.0179	0.0073 0.0185 0.0185 0.0183 0.0184 0.0184 0.0184 0.0207 0.0202 0.0203 0.0225 0.0229	0.0182 0.0182 0.0180 0.0181 0.0204 0.0204 0.0202 0.0226	0.0000 0.0003 0.0030 0.0030 0.0195 0.0190 0.0191 0.0223	0.0003 0.0030 0.0030 0.0195 0.0190 0.0191 0.0223 0.0217	0.0028 0.0028 0.0194 0.0188 0.0189 0.0222 0.0215	0.0000 0.0194 0.0199 0.0190 0.0222 0.0216	0.0194 0.0189 0.0190 0.0222 0.0216	0.0068 0.0069 0.0191	0.0004	0.0194	0.0140			
5         CPXV_Ger1990_2_1990           10         CPXV_Br_1937           CPXV_Catpox5wvl_1982         CPXV_Nor1994_Man_1994           CPXV_No_IP34_Man_1994         CPXV_No_F2_1999           CPXV_NorP4_1994         CPXV_NoryAreline_1994           CPXV_NoryAreline_1994         CPXV_NoryAreline_1994           CPXV_NoryAreline_1994         CPXV_NoryAreline_1994           CPXV_NoryAreline_1994         CPXV_NoryAreline_1990           CPXV_Swe_H1_1990         CPXV_Swe_H2_1990           9         CPXV_Fra2001_Nancy_2001           4         CPXV_Corp105_Cot1_2015	0.0234 0.0253 0.0331 0.0328 0.0319 0.0319 0.0319 0.0317 0.0318 0.0294 0.0288 0.0289 0.0281 0.0274 0.0274	0.0263 0.0262 0.0340 0.0337 0.0328 0.0328 0.0326 0.0327 0.0327 0.0303 0.0297 0.0298 0.0290 0.0283 0.0226	0.0222 0.0222 0.0299 0.0299 0.0287 0.0287 0.0285 0.0286 0.0286 0.0262 0.0257 0.0258 0.0249 0.0242 0.0242	0.0254 0.0254 0.0331 0.0328 0.0319 0.0319 0.0318 0.0318 0.0294 0.0294 0.0299 0.0290 0.0281 0.0274 0.0274	0.0121 0.0237 0.0234 0.0225 0.0225 0.0223 0.0224 0.0224 0.0224 0.0200 0.0194 0.0195 0.0187 0.0180	0.0236 0.0233 0.0224 0.0224 0.0223 0.0223 0.0223 0.0199 0.0199 0.0194 0.0195 0.0186 0.0179	0.0073 0.0185 0.0185 0.0184 0.0184 0.0207 0.0202 0.0203 0.0223 0.0229 0.0238	0.0182 0.0182 0.0180 0.0181 0.0204 0.0204 0.0200 0.0232 0.0226	0.0000 0.0003 0.0030 0.0030 0.0195 0.0190 0.0191 0.0223 0.0217 0.0227	0.0003 0.0030 0.0030 0.0195 0.0190 0.0191 0.0223 0.0217 0.0227	0.0028 0.0028 0.0194 0.0188 0.0189 0.0222 0.0215 0.0215	0.0000 0.0194 0.0189 0.0190 0.0222 0.0216	0.0194 0.0189 0.0190 0.0222 0.0216	0.0068 0.0069 0.0198 0.0191 0.0201	0.0004 0.0193 0.0195	0.0194	0.0140	00181		

**Table S9.** Patristic distances within CPXV-like 2 calculated from the Maximum likelihood (ML) and Bayesian inference (BI) trees of 62 conserved genes, 87 OPXV whole genomes, core genomes and orthologous genes.

								ML tree of	87 OPXV who	ole genomes		-								
	1		2		3	4	5	6		7		8	9	1	10			11		
	CPVV Corl	CPVV Cor0	CPVV Cor?	CRVV EM2	CPVV Cor2	CRVV Cort	CPVV Corl	CDVV Hurr	CPXV_Che	CDVV Swo	CDVV Swo	CDVV Ero?	CDVV Ero A	CPVV Coto		CPVV No	CRAN NOD	CRVV No	CPVV No	CRVV Nor
	998 2	1	007 Vole	292	014 Human	015 Catl	990 2	Lue09 1	Nova_DK_2	HI	H2	001 Nancy	miens 2016	ox 5wv1	CPXV_Br	F2	1994 MAN	H1	F1	wayfeline
	,,,o_2		007_102		011_111111	oro_ouu	,,,o_2	Lacoy_1	014			oor_raney	1110110_2010	0.1_0.111			_1///			wayteinie
1 CPXV_Ger1998_2	-																			
CPXV_Ger91	0.0175																			
2 CPXV_Ger2007_Vole	0.0203	0.0106																		
CPXV_FM2292	0.0199	0.0102	0.0064																	
3 CPXV_Ger2014_Human	0.0214	0.0155	0.0183	0.0179	0.01.40															
4 CPXV_Ger2015_Catl	0.0268	0.0209	0.0237	0.0233	0.0140	0.01.64														
5 CPXV_Ger1990_2	0.0313	0.0254	0.0283	0.0278	0.0185	0.0164	0.01.40													
6 CPXV_HumLue09_1	0.0332	0.0273	0.0301	0.0297	0.0204	0.0183	0.0149	0.0149												
CPXV_CneNova_DK_2014	0.0361	0.0303	0.0331	0.0327	0.0234	0.0212	0.0178	0.0148	0.00(2											
CPXV_Swe_HI	0.0361	0.0303	0.0331	0.0327	0.0234	0.0213	0.0178	0.0148	0.0063	0.0005										
7 CPXV_SWe_H2	0.0362	0.0303	0.0331	0.0327	0.0234	0.0215	0.01/9	0.0148	0.0005	0.0005	0.0226									
8 CPXV_Fra2001_Nancy	0.0330	0.0278	0.0300	0.0302	0.0209	0.0187	0.018/	0.0200	0.0255	0.0235	0.0230	0.0126								
9 CPAV_FraAmens_2010	0.0355	0.0275	0.0303	0.0299	0.0206	0.0185	0.0184	0.0203	0.0252	0.0255	0.0255	0.0130	0.0218							
10 CDVV Pr	0.0370	0.0311	0.0340	0.0333	0.0242	0.0221	0.0221	0.0239	0.0209	0.0209	0.0209	0.0220	0.0218	0.0064						
CPXV No F2	0.0375	0.0313	0.0345	0.0339	0.0240	0.0224	0.0224	0.0245	0.0272	0.0272	0.0273	0.0224	0.0221	0.0004	0.0185					
CPXV_NOP_1004_MAN	0.0356	0.0297	0.0320	0.0321	0.0228	0.0207	0.0207	0.0220	0.0255	0.0255	0.0255	0.0200	0.0204	0.0182	0.0185	0.0001				
CPXV No H1	0.0356	0.0298	0.0320	0.0322	0.0229	0.0208	0.0207	0.0220	0.0255	0.0255	0.0256	0.0207	0.0204	0.0182	0.0185	0.0001	0.0000			
CPXV No FI	0.0357	0.0298	0.0326	0.0322	0.0229	0.0208	0.0207	0.0220	0.0255	0.0255	0.0256	0.0207	0.0204	0.0182	0.0185	0.0001	0.0034	0.0034		
11 CPXV Norwayfeline	0.0357	0.0298	0.0326	0.0322	0.0229	0.0208	0.0207	0.0226	0.0255	0.0256	0.0256	0.0207	0.0204	0.0182	0.0185	0.0034	0.0034	0.0034	0.0000	
	0.0557	0.0270	0.0520	0.0522	0.0227	0.0200	0.0207	BI tree of	87 OPXV who	le genomes	0.0250	0.0207	0.0204	0.0102	0.0105	0.0004	0.0054	0.0054	0.0000	1
	1		2			7		6	5	9	8	1		11			1	0	4	3
	CDVIII C I	anna a	CDURY DV		CD171 C	CDURE O	CPXV Che	000000	anna a t	CDURL E A	CDURE D. A	CDURY N	CD101 N	CDURY NOD	CD171 N	CDUTE N	CDURY C .		annu a a	annu a a
	CPXV_GerI	CPXV_Ger2	CPXV_FM2	CPXV_Gers	CPXV_Swe_	CPXV_Swe_	Nova_DK_2	CPXV_Hun	CPXV_Geri	CPXV_FraA	CPXV_Fra2	CPXV_Nor	CPXV_NO_	CPXV_NOR	CPXV_NO_	CPXV_NO_	CPXV_Catp	CPXV_Br	CPXV_Ger2	CPXV_Ger2
	998_2	007_vole	292	1	H2	HI	014	Lue09_1	990_2	mens_2016	001_Nancy	wayteiine	FI	_1994_MAN	HI	F2	ox_5wv1		015_Catl	014_Human
1 CPXV_Ger1998_2																				
CPXV_Ger2007_Vole	0.0201																			
CPXV_FM2292	0.0197	0.0063																		
2 CPXV_Ger91	0.0173	0.0105	0.0101																	
CPXV_Swe_H2	0.0358	0.0328	0.0324	0.0300																
CPXV_Swe_H1	0.0358	0.0328	0.0324	0.0300	0.0005															
7 CPXV_CheNova_DK_2014	0.0358	0.0327	0.0323	0.0300	0.0063	0.0062														
6 CPXV_HumLue09_1	0.0329	0.0298	0.0294	0.0271	0.0147	0.0146	0.0146													
5 CPXV_Ger1990_2	0.0310	0.0280	0.0276	0.0252	0.0177	0.0177	0.0176	0.0148												
9 CPXV_FraAmiens_2016	0.0330	0.0300	0.0296	0.0272	0.0231	0.0230	0.0230	0.0201	0.0182											
8 CPXV_Fra2001_Nancy	0.0333	0.0303	0.0299	0.0275	0.0233	0.0233	0.0233	0.0204	0.0185	0.0135										
CPXV_Norwayfeline	0.0353	0.0323	0.0319	0.0295	0.0254	0.0253	0.0253	0.0224	0.0205	0.0202	0.0205									
CPXV_No_F1	0.0353	0.0323	0.0319	0.0295	0.0254	0.0253	0.0253	0.0224	0.0205	0.0202	0.0205	0.0000								
CPXV_NOR_1994_MAN	0.0353	0.0323	0.0319	0.0295	0.0253	0.0253	0.0253	0.0224	0.0205	0.0202	0.0205	0.0034	0.0034							
CPXV_No_H1	0.0353	0.0323	0.0319	0.0295	0.0253	0.0253	0.0253	0.0224	0.0205	0.0202	0.0205	0.0034	0.0034	0.0000	0.000					
11 CPXV_No_F2	0.0352	0.0322	0.0318	0.0294	0.0253	0.0253	0.0252	0.0223	0.0205	0.0202	0.0204	0.0034	0.0034	0.0001	0.0001	0.0100				
CPXV_Catpox_5wv1	0.0366	0.0336	0.0332	0.0308	0.0267	0.0266	0.0266	0.0237	0.0218	0.0215	0.0218	0.0180	0.0180	0.0180	0.0180	0.0180	0.0072			
10 CPXV_Br	0.0369	0.0339	0.0335	0.0311	0.0270	0.0270	0.0269	0.0240	0.0222	0.0219	0.0221	0.0184	0.0184	0.0183	0.0183	0.0183	0.0063	0.0000		
4 CPAV_Ger2015_Catl	0.0265	0.0255	0.0231	0.0207	0.0211	0.0211	0.0210	0.0181	0.0163	0.0183	0.0186	0.0206	0.0206	0.0206	0.0206	0.0205	0.0219	0.0222	0.0120	
5 CFAV_Ger2014_Human	0.0211	0.0181	0.01//	0.0155	0.0232	0.0231	0.0231	0.0202	0.0185	0.0204	0.0200	0.0227	0.0227	0.0220	0.0220	0.0220	0.0240	0.0245	0.0139	1

									ML tree of	f 87 OPXV co	e genomes										
		1		2		3	4	5	6		7		8	9	1	0			11		
		CDVV Corl	CDVV Carl	CDVU EM2	CDVU Carl	CDVU Carl	CDVV Carl	CDVU Corl	CDVV IIum	CPXV_Che	CDVV Sum	CDVU Sum	CDVU Em2	CDVU Ero A	CDVU Cote		CDVU No	CDVU Nor	CDVU No	CDVU Nor1	CDVU No
		008 2	007 Vole	202	1	014 Human	015 Cat1		Lue00 1	Nova_DK_2	HI	H2	001 Naney	miens 2016	ov5 wv1	CPXV_Br	F1	wayFeline	E2	004 Man	HI
		776_2	007_000	2)2	1	014_IIulikui	015_Call	JJ0_2	Luco)_1	014	111	112	001_IValky	mens_2010	0.02_001		11	wayreme	12	// <del>4_141a</del>	III
1 CF	PXV_Ger1998_2																				
CF	PXV_Ger2007_Vole	0.0207																			
2 CI	PXV_FM2292	0.0203	0.0061																		
CI	PXV_Ger91	0.0179	0.0102	0.0098																	
3 CI	PXV_Ger2014_Human	0.0217	0.0181	0.0177	0.0153																
4 CI	PXV_Ger2015_Cat1	0.0271	0.0235	0.0231	0.0207	0.0140															
5 CI	PXV_Ger1990_2	0.0316	0.0279	0.0275	0.0251	0.0184	0.0163														
6 CI	PXV_HumLue09_1	0.0335	0.0299	0.0295	0.0270	0.0203	0.0183	0.0149													
CF	PXV_CheNova_DK_2014	0.0363	0.0327	0.0323	0.0299	0.0231	0.0211	0.0177	0.0147												
7 CF	PXV_Swe_H1	0.0365	0.0329	0.0325	0.0301	0.0234	0.0213	0.0180	0.0149	0.0062											
CF	PXV_Swe_H2	0.0366	0.0330	0.0326	0.0301	0.0234	0.0214	0.0180	0.0150	0.0063	0.0005										
8 CI	PXV_Fra2001_Nancy	0.0340	0.0304	0.0300	0.0276	0.0209	0.0188	0.0187	0.0207	0.0235	0.0237	0.0238									
9 CI	PXV_FraAmiens_2016	0.0338	0.0302	0.0298	0.0274	0.0207	0.0186	0.0185	0.0205	0.0233	0.0235	0.0236	0.0137								
10 CF	PXV_Catpox5_wv1	0.0373	0.0336	0.0332	0.0308	0.0241	0.0220	0.0220	0.0239	0.0267	0.0269	0.0270	0.0221	0.0218							
<sup>10</sup> CF	PXV_Br	0.0376	0.0340	0.0336	0.0311	0.0244	0.0223	0.0223	0.0242	0.0270	0.0273	0.0273	0.0224	0.0222	0.0064						
CF	PXV_No_F1	0.0359	0.0323	0.0319	0.0295	0.0228	0.0207	0.0206	0.0226	0.0254	0.0256	0.0257	0.0207	0.0205	0.0182	0.0185					
CF	PXV_NorwayFeline	0.0359	0.0323	0.0319	0.0295	0.0228	0.0207	0.0206	0.0226	0.0254	0.0256	0.0257	0.0207	0.0205	0.0182	0.0185	0.0000				
11 CF	PXV_No_F2	0.0358	0.0322	0.0318	0.0294	0.0227	0.0206	0.0206	0.0225	0.0253	0.0255	0.0256	0.0207	0.0204	0.0181	0.0184	0.0034	0.0034			
CF	PXV_Nor1994_Man	0.0359	0.0323	0.0319	0.0294	0.0227	0.0206	0.0206	0.0225	0.0253	0.0256	0.0256	0.0207	0.0205	0.0181	0.0184	0.0034	0.0034	0.0001		
CF	PXV_No_H1	0.0359	0.0323	0.0319	0.0294	0.0227	0.0206	0.0206	0.0225	0.0253	0.0256	0.0256	0.0207	0.0205	0.0181	0.0184	0.0034	0.0034	0.0001	0.0000	
									BI tree of	87 OPXV cor	e genomes										
			2				11			1	0	9	8		7		6	5	4	3	1
		CDVV Carl		CDVAL C 0	CDMU N	CDVU No.	CRVV Nor1	CDVU N-	CPXV_No_	CPXV Catn		CPXV EraA	CPXV Era?	CPYV Swe	CPXV_Swe_	CPXV_Che	CDV/L II	CDVAL C. 1		CDVAL C A	CPXV Gerl
			(PXV HM)	I PXV LOPU								CIAY IIAA	<b>VI / VI I I</b> I I I I I I I I I I I I I I I I				$\mathbf{H} \mathbf{P} \mathbf{x} \mathbf{V} \mathbf{H} \mathbf{m}$	I PXV LOPI	CPXV Ger2	$P \times V = P \times V$	
		007 Vole	202 202	CPXV_Ger9	CPXV_N0_ F1	UPAV_INOF wayEeline	00/ Man	UPAV_NO_ H1	F2reversed	ov5 wvl	CPXV_Br	miens 2016	001 Nancy	Н2	H1_reverse	Nova_DK_2	Lue09_1	CPXV_Ger1	CPXV_Ger2 015_Cat1	014 Human	008 2
		007_Vole	292	1	F1	wayFeline	994_Man	HI	F2_reversed	ox5_wv1	CPXV_Br	miens_2016	001_Nancy	H2	H1_reverse d_	Nova_DK_2 014	Lue09_1	990_2	CPXV_Ger2 015_Cat1	014_Human	998_2
CI	PXV_Ger2007_Vole	007_Vole	292	l	F1	wayFeline	994_Man	HI	F2_reversed	ox5_wv1	CPXV_Br	miens_2016	001_Nancy	H2	H1_reverse d_	Nova_DK_2 014	Lue09_1	990_2	CPXV_Ger2 015_Cat1	014_Human	998_2
2 CH	PXV_Ger2007_Vole PXV_FM2292	007_Vole	292	1	F1	wayFeline	994_Man	HI	F2_reversed	ox5_wv1	CPXV_Br	miens_2016	001_Nancy	H2	H1_reverse d_	Nova_DK_2 014	Lue09_1	990_2	CPXV_Ger2 015_Cat1	014_Human	998_2
2 CH CH CH	PXV_Ger2007_Vole PXV_FM2292 PXV_Ger91	007_Vole 0.0061 0.0101	292 0.0097	l	F1	wayFeline	994_Man	HI	F2reversed	ox5_wv1	CPXV_Br	miens_2016	001_Nancy	H2	H1_reverse d_	Nova_DK_2 014	Lue09_1	990_2	CPXV_Ger2 015_Cat1	014_Human	998_2
2 CH CH CH	PXV_Ger2007_Vok PXV_FM2292 PXV_Ger91 PXV_No_F1	007_Vole 0.0061 0.0101 0.0319	0.0097 0.0315	0.0291	F1	wayFeline	994_Man	HI	F2_reversed	ox5_wv1	CPXV_Br	miens_2016	001_Nancy	H2	H1_reverse d_	Nova_DK_2 014	Lue09_1	990_2	CPXV_Ger2 015_Cat1	014_Human	998_2
2 CH CH CH CH CH	PXV_Ger2007_Vole PXV_FM2292 PXV_Ger91 PXV_No_F1 PXV_NorwayFeline	007_Vole 0.0061 0.0101 0.0319 0.0319	0.0097 0.0315 0.0315	0.0291 0.0291	0.0000	wayFeline	994_Man	HI	F2reversed 	ox5_wv1	CPXV_Br	miens_2016	001_Nancy	H2	H1_reverse d_	Nova_DK_2 014	Lue09_1	990_2	CPXV_Ger2 015_Cat1	014_Human	998_2
2 CH CH CH CH CH 11 CH	PXV_Ger2007_Vole PXV_FM2292 PXV_Ger91 PXV_No_F1 PXV_NoF1 PXV_NorvayFeline PXV_Nor1994_Man	007_Vole 0.0061 0.0101 0.0319 0.0319 0.0319	0.0097 0.0315 0.0315 0.0315	0.0291 0.0291 0.0291	0.0000 0.0034	0.0034	994_Man	HI	F2_reversed	ox5_wv1	CPXV_Br	miens_2016	001_Nancy	H2	H1_reverse d_	Nova_DK_2 014	Lue09_1	990_2	CPXV_Ger2 015_Cat1	014_Human	998_2
2 CF CF CF CF 11 CF CF	PXV_Ger2007_Vole PXV_FM2292 PXV_Ger91 PXV_NorFI PXV_NorVayFeline PXV_Nor1994_Man PXV_No_H1	0.0061 0.0061 0.0101 0.0319 0.0319 0.0319 0.0319	0.0097 0.0315 0.0315 0.0315 0.0315 0.0315	0.0291 0.0291 0.0291 0.0291 0.0291	0.0000 0.0034 0.0034	0.0034 0.0034	0.0000	HI	F2_reversed	ox5_wv1	CPXV_Br	miens_2016	001_Nancy	H2	H1_reverse d_	Nova_DK_2 014	Lue09_1	990_2	CPXV_Ger2 015_Cat1	014_Human	998_2
2 CF CF CF 11 CF CF CF	PXV_Ger2007_Vole PXV_Ger202 PXV_Ger91 PXV_No_F1 PXV_NorF1 PXV_Nor1994_Man PXV_No_H1 PXV_No_F2_reversed_	007_Vole 007_Vole 0.0061 0.0101 0.0319 0.0319 0.0319 0.0319 0.0318	0.0097 0.0315 0.0315 0.0315 0.0315 0.0315	0.0291 0.0291 0.0291 0.0291 0.0291 0.0291 0.0290	0.0000 0.0034 0.0034 0.0034	0.0034 0.0034 0.0034	0.0000 0.0001	UPAV_NO_ H1	F2_reversed	ox5_wv1	CPXV_Br	miens_2016	001_Nancy	H2	H1_reverse d_	Nova_DK_2 014	Lue09_1	990_2	CPXV_Ger2 015_Cat1	014_Human	998_2
2 CF CF CF CF 11 CF CF CF CF	PXV_Ger2007_Vole PXV_FM2292 PXV_Ger91 PXV_No_F1 PXV_NorI994_Man PXV_Nor1994_Man PXV_No_H1 PXV_No_F2_reversed_ PXV_Catpox5_wv1	007_Vole 007_Vole 0.0061 0.0101 0.0319 0.0319 0.0319 0.0319 0.0318 0.0332	0.0097 0.0315 0.0315 0.0315 0.0315 0.0315 0.0314 0.0328	0.0291 0.0291 0.0291 0.0291 0.0291 0.0290 0.0304	0.0000 0.0034 0.0034 0.0034 0.00379	0.0034 0.0034 0.0034 0.0037	0.0000 0.0001 0.0179	0.0001 0.0179	F2reversed 	ox5_wv1	CPXV_Br	miens_2016	001_Nancy	H2	H1_reverse d_	Nova_DK_2 014	Lue09_1	990_2	CPXV_Ger2 015_Cat1	014_Human	998_2
2 CF CF CF 11 CF CF CF CF 10 CF	PXV_Ger2007_Vole           PXV_FM2292           PXV_Ger91           PXV_NorwayFeline           PXV_NorH994_Man           PXV_NorH1           PXV_No_F2_reversed_           PXV_Ser	007_Vole 007_Vole 0.0061 0.0101 0.0319 0.0319 0.0319 0.0319 0.0318 0.0332 0.0335	0.0097 0.0315 0.0315 0.0315 0.0315 0.0315 0.0314 0.0328 0.0332	0.0291 0.0291 0.0291 0.0291 0.0291 0.0290 0.0304 0.0308	0.0000 0.0034 0.0034 0.0034 0.0034 0.0034	0.0034 0.0034 0.0034 0.0034 0.0034	0.0000 0.0001 0.0179 0.0182	UFAV_NO_ H1 0.0001 0.0179 0.0182	F2reversed 	0.0063	CPXV_Br	miens_2016	001_Nancy	H2	H1_reverse d_	Nova_DK_2 014	Lue09_1	990_2	CPXV_Ger2 015_Cat1	014_Human	998_2
2 CF CF CF CF 11 CF CF CF CF 10 CF CF 9 CF	PXV_Ger2007_Vole           PXV_FM2292           PXV_Ger91           PXV_Nor_FI           PXV_NoruayFeline           PXV_Nor1994_Man           PXV_No_F1           PXV_No_F2_reversed_           PXV_Catpox5_wv1           PXV_Br           PXV_FraAmiens_2016	007_Vole 007_Vole 0.0061 0.0101 0.0319 0.0319 0.0319 0.0319 0.0318 0.0332 0.0335 0.0298	0.0097 0.0315 0.0315 0.0315 0.0315 0.0314 0.0328 0.0332 0.0294	0.0291 0.0291 0.0291 0.0291 0.0291 0.0290 0.0304 0.0308 0.0270	0.0000 0.0034 0.0034 0.0034 0.0034 0.0179 0.0182 0.0202	0.0034 0.0034 0.0034 0.0034 0.0179 0.0182 0.0202	0.0000 0.0001 0.0179 0.0182 0.0202	UPAV_NO_ H1 0.0001 0.0179 0.0182 0.0202	F2reversed 	0.0063 0.0216	CPXV_Br	miens_2016	001_Nancy	H2	H1_reverse d_	Nova_DK_2 014	Lue09_1	990_2	CPXV_Ger2 015_Cat1	014_Human	998_2
2 CF CF CF 11 CF CF 11 CF CF 0 CF 0 CF 9 CF 8 CF	PXV_Ger2007_Vole PXV_FM2292 PXV_Ger91 PXV_No_F1 PXV_NorP4_Man PXV_No_H1 PXV_No_F2_reversed_ PXV_Catpox5_wv1 PXV_F74_PX	007_Vole 007_Vole 007_Vole 0.0061 0.0319 0.0319 0.0319 0.0335 0.0335 0.0335 0.0298 0.0300	0.0097 0.0315 0.0315 0.0315 0.0315 0.0315 0.0314 0.0328 0.0332 0.0294	0.0291 0.0291 0.0291 0.0291 0.0290 0.0304 0.0308 0.0270 0.0272	0.0000 0.0034 0.0034 0.0034 0.0039 0.0182 0.0202 0.0205	0.0034 0.0034 0.0034 0.0034 0.0039 0.0182 0.0202 0.0202	0.0000 0.0000 0.00179 0.0179 0.0202 0.0202	0.0001 0.0179 0.0182 0.0202	F2_reversed 	0.0063 0.0216 0.0218	CPXV_Br	miens_2016	001_Nancy	H2	H1_reverse 	Nova_DK_2 014	Lue09_1	990_2	CPXV_Get2 015_Cat1	014_Human	998_2
2 CF CF CF 11 CF CF 11 CF CF CF 0 CF 9 CF 8 CF CF	PXV_Ger2007_Vole PXV_Ger91 PXV_Ger91 PXV_NorF1 PXV_NorF1 PXV_Nor1994_Man PXV_No_H1 PXV_No_F2_reversed_ PXV_Catpox5_wv1 PXV_Br PXV_Br PXV_FraAmiens_2016 PXV_Fra2001_Nancy PXV_Swe_H2	007_Vole 007_Vole 0.0061 0.0101 0.0319 0.0319 0.0319 0.0319 0.0318 0.0332 0.0335 0.0298 0.0300 0.0300 0.0326	292 292 0.0097 0.0315 0.0315 0.0315 0.0315 0.0314 0.0328 0.0322 0.0294 0.0294	0.0291 0.0291 0.0291 0.0291 0.0290 0.0304 0.0270 0.0308	CPXV_N0_ F1 0.0000 0.0034 0.0034 0.0034 0.0034 0.0179 0.0202 0.0205	0.0034 0.0034 0.0034 0.0034 0.0179 0.0182 0.0202 0.0205	0.0000 0.0000 0.0001 0.0179 0.0182 0.0202 0.0204	CPAV_NO_ H1 0.0001 0.0179 0.0182 0.0202 0.0204	F2_reversed 	0.0063 0.0216 0.0218	CPXV_Br	miens_2016	001_Nancy 001_Nancy	H2	HIreverse	Nova_DK_2 014	CPXv_Hum Lue09_1	990_2	CPXV_Get2 015_Cat1	CPAV_Ger2 014_Human	998_2
2 CF CF CF CF 11 CF CF CF 10 CF CF 9 CF 8 CF 7 CF	PXV_Ger2007_Vole PXV_Ger2007_Vole PXV_Ger91 PXV_No_F1 PXV_NorJ994_Man PXV_No_F1 PXV_No_F2_reversed_ PXV_Catpox5_wv1 PXV_Br PXV_FraAmiens_2016 PXV_Fra2001_Nancy PXV_Fx2001_Nancy PXV_Swe_H2 PXV_Swe_H1_reversed_	007_Vole 007_Vole 0.00061 0.0101 0.0319 0.0319 0.0319 0.0319 0.0318 0.0332 0.0335 0.0298 0.0300 0.0326 0.0326	0.0097 0.0315 0.0315 0.0315 0.0315 0.0314 0.0328 0.0322 0.0322 0.0322	0.0291 0.0291 0.0291 0.0291 0.0290 0.0304 0.0308 0.0270 0.0308 0.0272 0.0298	0.0000 0.00034 0.0034 0.0034 0.0034 0.0034 0.0034 0.0035 0.0205 0.0225	0.0034 0.0034 0.0034 0.0034 0.0034 0.00179 0.0182 0.0202 0.0205 0.0225	0.0000 0.0000 0.0001 0.0179 0.0182 0.0202 0.0204 0.0223 0.0223	CPAY_NO_ HI 0.0001 0.0179 0.0182 0.0202 0.0203 0.0253	F2_reversed 	0.0063 0.0216 0.0226	CPXV_Br	miens_2016	001_Nancy	H2	H1_reverse d_	Nova_DK_2 014	CPAY_Hum Lue09_1	990_2	CPXV_Get2 015_Cat1	CPAV_Cer2 014_Human	998_2
2 CF CF CF 11 CF CF 11 CF CF 10 CF 9 CF 8 CF 7 CF CF 7 CF CF	PXV_Ger2007_Vole PXV_FM2292 PXV_Ger91 PXV_NorWayFeline PXV_NorH994_Man PXV_No_F1 PXV_No_F1 PXV_No_F2_reversed_ PXV_Catpox5_wv1 PXV_Br PXV_Br PXV_FraAmiens_2016 PXV_Fra2001_Nancy PXV_Swe_H2 PXV_Swe_H2 PXV_CheNova_DK_2014	007_Vole 007_Vole 00061 0.0061 0.0101 0.0319 0.0319 0.0319 0.0318 0.0332 0.0335 0.0298 0.0306 0.0326 0.0326 0.0323	0.0097 0.0315 0.0315 0.0315 0.0315 0.0315 0.0314 0.0328 0.0322 0.0294 0.0322 0.0322 0.0319	0.0291 0.0291 0.0291 0.0291 0.0290 0.0291 0.0290 0.0304 0.0270 0.0308 0.0270 0.0298 0.0298	0.0000 0.0034 0.0034 0.0034 0.0034 0.0034 0.0032 0.0202 0.0202 0.0205 0.0253 0.0251	0.0034 0.0034 0.0034 0.0034 0.0034 0.0034 0.0034 0.0025 0.0202 0.0205 0.0253 0.0251	0.0000 0.0000 0.00179 0.0182 0.0202 0.0203 0.0253 0.0253	CPAY_NO_ HI 0.0001 0.0179 0.0182 0.0202 0.0204 0.0253 0.0253	F2_reversed 	0.0063 0.0216 0.0267 0.0267 0.0267	CPXV_Br	miens_2016	001_Nancy	H2	H1_reverse d_	Nova_DK_2 014	CPAY_Hum Lue09_1	990_2	CPXV_Get2 015_Cat1	CPAV_Cer2 014_Human	998_2
2 CF 2 CF CF 11 CF CF 11 CF CF 0 CF 9 CF 8 CF 7 CF 7 CF CF 6 CF	PXV_Ger2007_Vole PXV_FM2292 PXV_Ger91 PXV_NorWayFeline PXV_NorWayFeline PXV_NorH994_Man PXV_No_F1 PXV_No_F2_reversed_ PXV_Srappost_2016 PXV_Fra2001_Nancy PXV_Fra2001_Nancy PXV_Swe_H1 PXV_Swe_H2 PXV_Swe_H1_reversed_ PXV_Swe_H1_reversed_ PXV_CheNova_DK_2014 PXV_HumLae09_1	007_Vole 007_Vole 007_Vole 0.0061 0.0101 0.0319 0.0319 0.0319 0.0319 0.0312 0.0332 0.0335 0.0298 0.0320 0.0323 0.0295	CPAV_FM2 292 0.0097 0.0315 0.0315 0.0315 0.0315 0.0315 0.0314 0.0322 0.0322 0.0322 0.0322 0.0322 0.0322	0.0291 0.0291 0.0291 0.0291 0.0291 0.0290 0.0304 0.0270 0.0272 0.0272 0.0272 0.0275 0.0275 0.0275	CPXV_R8_ F1 0.0000 0.0034 0.0034 0.0034 0.0034 0.0019 0.0182 0.0202 0.0205 0.0254 0.0253 0.0251 0.0223	0.0034 0.0034 0.0034 0.0034 0.0179 0.0182 0.0202 0.0205 0.0254 0.0253 0.0251 0.0223	0.0000 0.0000 0.0017 0.0179 0.0202 0.0204 0.0203 0.0253 0.0253	CPAY_NO_ HI 0.0001 0.0179 0.0182 0.0202 0.0204 0.0253 0.0253 0.0253	F2_reversed 	0.0063 0.0216 0.0218 0.0267 0.0267 0.0264	CPXV_Br	miens_2016	001_Nancy 001_Nancy 0.0235 0.0235 0.0232 0.0204	H2 H2	H1_reverse d_	Nova_DK_2 014	CPX _Hum Lue09_1	990_2	CPXV_Get2 015_Cat1	CPAV_Cer2 014_Human	998_2
2 CF 2 CF CF CF 11 CF CF 10 CF 9 CF 8 CF 7 CF 7 CF CF 6 CF 5 CF	PXV_Ger2007_Vole PXV_FM2292 PXV_Ger91 PXV_No_F1 PXV_No_F1 PXV_No_F1 PXV_No_F2_reversed_ PXV_Catpox5_wv1 PXV_Br PXV_Fra2001_Nancy PXV_Fra2001_Nancy PXV_Swe_H1_reversed_ PXV_Swe_H1_reversed_ PXV_Swe_H1_reversed_ PXV_ChenNova_DK_2014 PXV_HomLavDS_1 PXV_Ger1990_2 PXV_Ger1990_2	007_Vole 007_Vole 007_Vole 0.0061 0.0101 0.0319 0.0319 0.0319 0.0319 0.0312 0.0332 0.0335 0.0298 0.0326 0.0323 0.0323 0.0323 0.0325 0.0295 0.0276	CPXV_FM2 292 0.0097 0.0315 0.0315 0.0315 0.0315 0.0315 0.0314 0.0322 0.0294 0.0296 0.0322 0.0322 0.0322 0.0322 0.0322 0.0322 0.0322	0.0291 0.0291 0.0291 0.0291 0.0291 0.0291 0.0304 0.0304 0.0304 0.0270 0.0272 0.0298 0.0275 0.0277 0.0298	0.0000 0.0034 0.0034 0.0034 0.0034 0.0034 0.0034 0.0032 0.0205 0.0205 0.0254 0.0253 0.0253 0.0253 0.0253	0.0034 0.0034 0.0034 0.0034 0.0179 0.0182 0.0205 0.0254 0.0253 0.0253 0.0253 0.0253 0.0253	0.0000 0.0000 0.0000 0.0179 0.0182 0.0202 0.0204 0.0253 0.0253 0.0253 0.0253	CPAY_NO_ HI 0.0001 0.0179 0.0182 0.0202 0.0204 0.0253 0.0253 0.0251 0.0223	F2_reversed 	0.0063 0.0063 0.0216 0.0218 0.0267 0.0264 0.0267 0.0264 0.0266 0.0217	CPXV_Br	miens_2016	001_Nancy 001_Nancy 0.0235 0.0235 0.0235 0.0232 0.0204 0.0204	H2 H2 0.0005 0.0005 0.0005 0.0005 0.00148 0.0178	H1_reverse d_ 	Nova_DK_2 014	CPXv_Hum Lue09_1	990_2	CPXV_Get2 015_Cat1	CPAV_Cer2 014_Human	998_2
2 CF CF CF CF CF CF CF CF CF CF CF 0 CF 9 CF 8 CF 7 CF 7 CF 7 CF 7 CF 6 CF 4 CF	PXV_Ger2007_Vole PXV_FM2292 PXV_Ger91 PXV_No_F1 PXV_No_F1 PXV_No_F1 PXV_No_H1 PXV_No_F2_reversed_ PXV_Sev1 PXV_FraAmiens_2016 PXV_Fra2001_Nancy PXV_Swe_H1_reversed_ PXV_Swe_H1_reversed_ PXV_CheNova_DK_2014 PXV_CheNova_DK_2014 PXV_Ger1990_2 PXV_Ger2015_Cat1	007_Vole 007_Vole 007_Vole 0.0061 0.0101 0.0319 0.0319 0.0319 0.0319 0.0332 0.0335 0.0298 0.0300 0.0326 0.0323 0.0295 0.0276 0.0232	CPXV_FM2 292 0.0097 0.0315 0.0315 0.0315 0.0315 0.0314 0.0322 0.0294 0.0296 0.0322 0.0322 0.0319 0.0291 0.0272 0.0228	0.0291 0.0291 0.0291 0.0291 0.0291 0.0291 0.0204 0.0304 0.0304 0.0272 0.0298 0.0277 0.0298 0.0295 0.0267 0.0248	0.0000 0.0034 0.0034 0.0034 0.0034 0.0034 0.0179 0.0182 0.0205 0.0205 0.0253 0.0225 0.0223 0.0223 0.0224 0.0223 0.0224	0.0034 0.0034 0.0034 0.0034 0.0034 0.0034 0.0179 0.0182 0.0205 0.0225 0.0225 0.0225 0.0223 0.0223 0.0224 0.0223	0.0000 0.0000 0.0001 0.0179 0.0182 0.0202 0.0204 0.0253 0.0253 0.0253 0.0223 0.0203 0.0204	CPAV_NO_ HI 0.00001 0.0179 0.0182 0.0202 0.0204 0.0253 0.0253 0.0253 0.02253 0.0223	F2_reversed 	0.0063 0.0026 0.0267 0.0267 0.0264 0.0227 0.0264 0.02217 0.0264	CPXV_Br 0.0219 0.0221 0.0270 0.0270 0.0270 0.0220 0.0220 0.0220	miens_2016	001_Nancy 0.0235 0.0235 0.0235 0.0232 0.0225 0.0224 0.0185 0.0186	H2 H2 0.0005 0.0005 0.0062 0.0148 0.0178 0.0211	H1reverse d_ 	Nova_DK_2 014	CPX _Hum Lue09_1	0.0161	CPXV_Get2 015_Cat1	CPAV_Cer2 014_Human	998_2
2 CE CE CE CE CE CE CE CE CE CE CE CE CE C	PXV_Ger2007_Vole           PXV_FM2292           PXV_Ger91           PXV_No_F1           PXV_NorP94_Man           PXV_NorJ994_Man           PXV_No_F1           PXV_No_F5_reversed_           PXV_No_F6           PXV_Ser           PXV_FraAmiens_2016           PXV_Fra2001_Nancy           PXV_Swe_H2           PXV_Swe_H1_reversed_           PXV_CheNova_DK_2014           PXV_Ger2015_Cat1           PXV_Ger2014_Human	007_Vole 007_Vole 007_Vole 0.00061 0.0101 0.0319 0.0319 0.0319 0.0319 0.0319 0.0319 0.0319 0.0326 0.0326 0.0326 0.0326 0.0326 0.0326 0.0326 0.0232 0.0276 0.0232 0.0179	0.0097 0.0315 0.0315 0.0315 0.0315 0.0315 0.0314 0.0328 0.0332 0.0322 0.0322 0.0322 0.0322 0.0322 0.0322 0.0322 0.0322 0.0322 0.0322 0.0322 0.0272 0.0272 0.0272 0.0272 0.0272	0.0291 0.0291 0.0291 0.0291 0.0291 0.0290 0.0304 0.0308 0.0270 0.0308 0.0272 0.0272 0.0272 0.0272 0.0272 0.0272 0.0272 0.0272 0.0291 0.0292 0.0291 0.0291 0.0291 0.0291 0.0291 0.0291 0.0291 0.0291 0.0291 0.0291 0.0291 0.0291 0.0291 0.0291 0.0291 0.0291 0.0291 0.0292 0.0291 0.0292 0.0291 0.0292 0.0291 0.0292 0.0291 0.0292 0.0291 0.0292 0.0291 0.0292 0.0291 0.0292 0.0291 0.0291 0.0292 0.0291 0.0292 0.0291 0.0291 0.0292 0.0292 0.0292 0.0292 0.0292 0.0292 0.0292 0.0292 0.0292 0.0292 0.0292 0.0292 0.0292 0.0292 0.0295 0.0291 0.0295 0.	CPXV_R8_ F1 0.0000 0.0034 0.0034 0.0034 0.0034 0.0034 0.00205 0.0225 0.0225 0.0225 0.0225 0.0225 0.0224 0.0220 0.0224	0.0034 0.0034 0.0034 0.0034 0.0034 0.0034 0.00179 0.0182 0.0202 0.0225 0.0225 0.0225 0.0225 0.0223 0.0224 0.0204 0.0204 0.0224	0.0000 0.0000 0.0001 0.0179 0.0182 0.0202 0.0204 0.0253 0.0253 0.0253 0.0223 0.0203 0.0204 0.0223	CPAY_NO_ HI 0.0001 0.0179 0.0182 0.0202 0.0204 0.0253 0.0253 0.0253 0.0253 0.0203 0.0204 0.0223	F2_reversed 	0.0063 0.0063 0.0216 0.0226 0.0226 0.0226 0.0226 0.0227 0.0224	CPXV_Br	miens_2016	001_Nancy 001_Nancy 0.0235 0.0235 0.0235 0.0235 0.0232 0.0185 0.0188 0.0186	H2 H2 0.0005 0.0005 0.0005 0.0148 0.0178 0.0211 0.0232	H1reverse d_ 	Nova_DK_2 014 014 0.014 0.0145 0.0175 0.0208 0.0229	CPXv_Hum Lue09_1	0.0161 0.0182	CPXV_Get2 015_Cat1	CPAV_Cer2 014_Human	998_2

									ML tree of	OPXV orthole	gous genes										
		1	3	4	6		7		5	9	8		10			11				2	
		CPXV_Ger1 998_2	CPXV_Ger2 014_Human	CPXV_Ger2 015_Cat1	CPXV_Hum Lue09_1	CPXV_Che Nova_DK_2 014	CPXV_Swe H2	CPXV_Swe H1	CPXV_Ger1 990_2	CPXV_FraA miens_2016	CPXV_Fra2 001_Nancy	CPXV_Br	CPXV_Catp ox5_wv1	CPXV_Nor wayfeline	CPXV_NoF 1	CPXV_NoF	CPXV_NoH 1	CPXV_Nor1 994_Man	CPXV_FM2 292	CPXV_Ger2 007_Vole	CPXV_Ger9 1
1	CPXV_Ger1998_2																				
3	CPXV_Ger2014_Human	0.0223																			
4	CPXV_Ger2015_Cat1	0.0280	0.0156																		
6	CPXV_HumLue09_1	0.0344	0.0219	0.0193																	
	CPXV_CheNova_DK_2014	0.0374	0.0250	0.0223	0.0156																
7	CPXV_SweH2	0.0376	0.0252	0.0225	0.0158	0.0069															
	CPXV_SweH1	0.0376	0.0251	0.0225	0.0157	0.0069	0.0006													L'	
5	CPXV_Ger1990_2	0.0329	0.0204	0.0178	0.0157	0.0188	0.0190	0.0189												Ļ'	
9	CPXV_FraAmiens_2016	0.0349	0.0224	0.0198	0.0213	0.0244	0.0246	0.0245	0.0198											Ļ'	
8	CPXV_Fra2001_Nancy	0.0347	0.0222	0.0195	0.0211	0.0242	0.0244	0.0243	0.0196	0.0144										L	L
10	CPXV_Br	0.0390	0.0266	0.0239	0.0255	0.0286	0.0287	0.0287	0.0240	0.0234	0.0232									L	L
	CPXV_Catpox5_wv1	0.0384	0.0260	0.0233	0.0249	0.0280	0.0281	0.0281	0.0234	0.0228	0.0226	0.0062								ļ'	
	CPXV_Norwayfeline	0.0377	0.0253	0.0226	0.0242	0.0273	0.0274	0.0274	0.0227	0.0221	0.0219	0.0201	0.0195							L	Ļ
	CPXV_NoF1	0.0377	0.0253	0.0226	0.0242	0.0273	0.0274	0.0274	0.0227	0.0221	0.0219	0.0201	0.0195	0.0000						<u> </u>	L
11	CPXV_NoF2	0.0375	0.0250	0.0223	0.0239	0.0270	0.0272	0.0271	0.0224	0.0218	0.0216	0.0198	0.0192	0.0037	0.0037					<u> </u>	L
	CPXV_NoH1	0.0375	0.0250	0.0224	0.0239	0.0270	0.0272	0.0271	0.0225	0.0218	0.0216	0.0198	0.0192	0.0037	0.0037	0.0001				L	<u> </u>
	CPXV_Nor1994_Man	0.0375	0.0250	0.0224	0.0239	0.0270	0.0272	0.0271	0.0225	0.0218	0.0216	0.0198	0.0192	0.0037	0.0037	0.0001	0.0000			L	L
	CPXV_FM2292	0.0213	0.0195	0.0252	0.0316	0.0347	0.0348	0.0348	0.0301	0.0321	0.0319	0.0362	0.0356	0.0349	0.0349	0.0347	0.0347	0.0347		ļ'	<u> </u>
2	CPXV_Ger2007_Vole	0.0220	0.0202	0.0259	0.0323	0.0353	0.0355	0.0355	0.0308	0.0328	0.0326	0.0369	0.0363	0.0356	0.0356	0.0354	0.0354	0.0354	0.0066	ļ'	L
	CPXV_Ger91	0.0185	0.0167	0.0224	0.0288	0.0318	0.0320	0.0320	0.0273	0.0293	0.0291	0.0334	0.0328	0.0321	0.0321	0.0319	0.0319	0.0319	0.0116	0.0123	

5 10 3 4 6 CPXV\_Catpox5 CPXV\_Ger1990\_2 CPXV\_NorwayF CPXV\_No\_F1 CPXV\_Ger1998 CPXV\_Ger2007\_V CPXV\_Ger2014 CPXV\_HumLue CPXV\_Ger2015 CPXV\_Nor1994 CPXV\_CheNow CPXV FM2292 CPXV Ger91 PXV Br CPXV No F2 CPXV No H1 CPXV Swe H1 CPXV Swe H2 CPXV FraAmiens CPXV Fra2001 Nancy Human Cat1 Man 1 CPXV\_Ger1998\_2 CPXV\_FM2292 0.0103 CPXV Ger91 0.0102 0.0071 CPXV\_Ger2007\_Vole 0.0124 0.0061 0.0080 CPXV Ger2014 Human 0.0124 0.0099 0.0051 0.0101 CPXV\_HumLue09\_1 0.0130 0.0136 0.0118 0.0133 0.0118 0.0137 0.0126 CPXV\_Br 0.0163 0.0157 0.0143 0.0150 CPXV Catpox5wv1 0.0165 0.0159 0.0143 0.0154 0.0139 0.0123 0.0053 4 CPXV\_Ger1990\_2 0.0137 0.0119 0.0086 0.0141 0.0148 0.0125 0.0142 0.0140 5 CPXV\_Ger2015\_Cat1 0.0133 0.0133 0.0111 0.0127 0.0105 0.0094 0.0129 0.0129 0.0083 CPXV\_Nor1994\_Man 0.0161 0.0132 0.0117 0.0127 0.0152 0.0135 0.0152 0.0119 0.0117 0.0133 CPXV No F2 0.0160 0.0151 0.0134 0.0151 0.0131 0.0119 0.0116 0.0116 0.0132 0.0126 0.0002 0.0127 0.0002 CPXV No H1 0.0161 0.0152 0.0135 0.0152 0.0132 0.0119 0.0117 0.0117 0.0133 0.0000 CPXV\_NorwayFeline 0.0158 0.0149 0.0130 0.0149 0.0129 0.0118 0.0116 0.0116 0.0127 0.0124 0.0021 0.0020 0.0021 CPXV No F1 0.0158 0.0149 0.0130 0.0149 0.0129 0.0118 0.0116 0.0116 0.0127 0.0124 0.0021 0.0020 0.0021 0.0000 CPXV CheNova DK 0.0148 0.0150 0.0138 0.0150 0.0133 0.0100 0.0119 0.0119 0.0113 0.0116 0.0117 0.0117 0.0117 0.0120 0.0120 CPXV\_Swe\_H1 0.0145 0.0147 0.0132 0.0142 0.0127 0.0097 0.0117 0.0116 0.0107 0.0112 0.0119 0.0119 0.0119 0.0121 0.0121 0.0049 CPXV Swe H2 0.0145 0.0148 0.0132 0.0143 0.0128 0.0098 0.0119 0.0117 0.0108 0.0112 0.0120 0.0120 0.0120 0.0122 0.0122 0.0049 0.0003 7 CPXV\_FraAmiens 0.0151 0.0146 0.0128 0.0147 0.0126 0.0106 0.0121 0.0121 0.0109 0.0115 0.0119 0.0119 0.0119 0.0119 0.0119 0.0117 0.0115 0.0114 6 CPXV\_Fra2001\_Nancy 0.0134 0.0139 0.0123 0.0136 0.0120 0.0103 0.0132 0.0130 0.0094 0.0105 0.0126 0.0125 0.0126 0.0122 0.0122 0.0112 0.0110 0.0110 0.0098 В 2 7 6 4 5 9 8 11 10 CPXV\_CheN CPXV Ger1998 CPXV Ger2007 CPXV FM22 CPXV HumLue CPXV Ger2015 Cat CPXV Ger1990 CPXV\_FraAmie CPXV\_Fra2001 CPXV\_Norwayf CPXV\_NOR\_19 CPXV\_Ger2014 CPXV\_Catpox\_5wv1 CPXV\_Br CPXV\_Ger91 CPXV\_Swe\_H2 CPXV\_Swe\_H1 va\_DK\_201 CPXV\_No\_H1 CPXV\_No\_F2 CPXV\_No\_F1 09 1 ns\_2016\_-94 MAN Vole Nancy eline -Human CPXV\_Ger1998\_2 CPXV Ger2007 Vole 0.0126 CPXV FM2292 0.0119 0.0048 CPXV\_Ger91 0.0109 0.0077 0.0070 CPXV Swe H2 0.0180 0.0170 0.0176 0.0173 CPXV Swe H1 0.0180 0.0169 0.0175 0.0172 0.0004 CPXV\_CheNova\_DK\_2014 0.0180 0.0173 0.0177 0.0176 0.0047 0.0047 CPXV\_HumLue09\_1 0.0170 0.0161 0.0164 0.0160 0.0106 0.0105 0.0106 4 CPXV\_Ger2015\_Cat1 0.0145 0.0142 0.0126 0.0129 0.0157 0.0138 0.0126 0.0108 0.0151 0.0094 5 CPXV\_Ger1990\_2 0.0165 0.0152 0.0154 0.0118 0.0117 0.0120 0.0098 0.0175 0.0159 0.0118 0.0119 0.0163 0.0164 0.0123 0.0123 0.0125 0.0119 9 CPXV\_FraAmiens\_2016 CPXV\_Fra2001\_Nancy 0.0149 0.0130 0.0113 0.0105 0.0101 0.0169 0.0148 0.0153 0.0130 0.0129 0.0119 CPXV\_Norwayfeline 0.0182 0.0166 0.0171 0.0168 0.0133 0.0132 0.0130 0.0133 0.0126 0.0131 0.0125 0.0134 CPXV NOR 1994 MAN 0.0184 0.0169 0.0174 0.0171 0.0131 0.0130 0.0127 0.0133 0.0130 0.0133 0.0122 0.0135 0.0026 CPXV\_No\_H1 0.0184 0.0169 0.0174 0.0171 0.0131 0.0130 0.0127 0.0133 0.0130 0.0133 0.0122 0.0135 0.0026 0.0000 CPXV No F2 0.0183 0.0169 0.0174 0.0171 0.0131 0.0130 0.0127 0.0133 0.0130 0.0133 0.0122 0.0134 0.0026 0.0001 0.0001 CPXV No F1 0.0182 0.0133 0.0130 0.0026 0.0026 0.0166 0.0171 0.0168 0.0132 0.0133 0.0126 0.0131 0.0125 0.0134 0.0000 0.0026 CPXV\_Ger2014\_Human 0.0150 0.0114 0.0116 0.0096 0.0138 0.0137 0.0139 0.0123 0.0097 0.0114 0.0125 0.0121 0.0129 0.0130 0.0130 0.0130 0.0129 CPXV\_Catpox\_5wv1 0.0192 0.0173 0.0179 0.0176 0.0134 0.0132 0.0136 0.0140 0.0137 0.0143 0.0125 0.0140 0.0128 0.0126 0.0126 0.0125 0.0128 0.0143 CPXV\_Br 0.0197 0.0175 0.0179 0.0179 0.0138 0.0136 0.0136 0.0144 0.0140 0.0145 0.0125 0.0141 0.0129 0.0126 0.0126 0.0125 0.0129 0.0147 0.0049

**Table S10.** Genetic distances within CPXV-like 2 estimated by p-distances from the alignment of 62 conserved genes (A), 87 OPXV whole genomes (B), core genomes (C) and orthologous genes (D).

											С										
			2		1			11			3		7		6	5	4	9	8	1	0
		CPXV_Ger2007	CDVAL EMODOO	CDVU C 01	CD14/ C 1000 0	CDVU N DI	CPXV_NorwayF	CPXV_Nor1	CDVU N UI	CDVU N F2	CPXV_Ger2014	CDVU C ID	ODVU O III	CPXV_CheNova	CPXV_HumLue	CPXV_Ger1990	CPXV_Ger2015	CPXV_FraAmie	CPXV_Fra2001	CDVII C . C 1	CDVAL D
		Vole	CPXV_FM2292	CPXV_Ger91	CPAV_Ger1998_2	CPAV-N0-F1	eline	994_Man	CPXV_N0_HI	CPXV_N0_F2	Human	CPXV_Swe_H2	CPXV_Swe_HI	_DK_2014	09_1	2	Catl	ns_2016	_Nancy	CPXv_Catpox5_wv1	CPXV_Br
	CPXV_Ger2007_Vole								1			1									
2	CPXV_FM2292	0.0047																			
	CPXV_Ger91	0.0075	0.0068																		
1	CPXV_Ger1998_2	0.0130	0.0123	0.0113																	
	CPXV-No-F1	0.0167	0.0171	0.0168	0.0185																
	CPXV_NorwayFeline	0.0167	0.0171	0.0168	0.0185	0.0000															
11	CPXV_Nor1994_Man	0.0170	0.0174	0.0170	0.0186	0.0027	0.0027														
	CPXV_No_H1	0.0170	0.0174	0.0170	0.0186	0.0027	0.0027	0.0000													
	CPXV_No_F2	0.0170	0.0174	0.0170	0.0186	0.0026	0.0026	0.0001	0.0001												
3	CPXV_Ger2014_Human	0.0113	0.0115	0.0096	0.0153	0.0130	0.0130	0.0130	0.0130	0.0130											
	CPXV_Swe_H2	0.0172	0.0177	0.0174	0.0183	0.0135	0.0135	0.0133	0.0133	0.0133	0.0139										
7	CPXV_Swe_H1	0.0171	0.0176	0.0173	0.0183	0.0134	0.0134	0.0132	0.0132	0.0132	0.0139	0.0004									
	CPXV_CheNova_DK_2014	0.0175	0.0178	0.0177	0.0182	0.0131	0.0131	0.0127	0.0127	0.0127	0.0139	0.0048	0.0048								
6	CPXV_HumLue09_1	0.0162	0.0165	0.0160	0.0172	0.0135	0.0135	0.0134	0.0134	0.0134	0.0124	0.0108	0.0107	0.0106							
5	CPXV_Ger1990_2	0.0152	0.0154	0.0151	0.0167	0.0132	0.0132	0.0134	0.0134	0.0133	0.0114	0.0120	0.0119	0.0121	0.0099						
4	CPXV_Ger2015_Cat1	0.0138	0.0145	0.0141	0.0159	0.0126	0.0126	0.0130	0.0130	0.0130	0.0097	0.0128	0.0127	0.0129	0.0109	0.0094					
9	CPXV_FraAmiens_2016	0.0164	0.0164	0.0160	0.0179	0.0126	0.0126	0.0123	0.0123	0.0123	0.0126	0.0126	0.0126	0.0126	0.0121	0.0120	0.0120				
8	CPXV_Fra2001_Nancy	0.0150	0.0154	0.0150	0.0171	0.0135	0.0135	0.0136	0.0136	0.0136	0.0122	0.0132	0.0131	0.0130	0.0120	0.0106	0.0114	0.0102			
40	CPXV_Catpox5_wv1	0.0174	0.0179	0.0176	0.0195	0.0128	0.0128	0.0126	0.0126	0.0126	0.0144	0.0135	0.0134	0.0136	0.0141	0.0143	0.0137	0.0126	0.0142		
10	CPXV_Br	0.0176	0.0180	0.0179	0.0200	0.0129	0.0129	0.0126	0.0126	0.0126	0.0148	0.0139	0.0138	0.0136	0.0145	0.0145	0.0141	0.0126	0.0142	0.0049	
											D										
			2		1		10	4		11	D		7		5	6	1	11	8	9	3
		CPXV FM2202	2 CPXV_Ger2007	CPXV Ger01	1 CPXV Ger1008 2	CPXV Br	10 CPXV_Catpox5	4 CPXV_Ger2	CPXV_Nor1994	11 CPXV. NoF2	D CPXV NoH1	CPYV SupH1	7 CPXV SureH2	CPXV_CheNova	5 a CPXV_Ger1990	6 CPXV_HumLue	CPYV NoFI	1 CPXV_Norwayf	8 CPXV_Fra2001	9 CPXV_FraAmiens_201	3 CPXV_Ger2014_Huma
		CPXV_FM2292	2 2 CPXV_Ger2007 _Vole	CPXV_Ger91	1 CPXV_Ger1998_2	CPXV_Br	10 CPXV_Catpox5 _wv1	4 CPXV_Ger2 015_Cat1	CPXV_Nor1994 _Man	11 CPXV_NoF2	D CPXV_NoH1	CPXV_SweH1	7 CPXV_SweH2	CPXV_CheNova _DK_2014	5 a CPXV_Ger1990 _2	6 CPXV_HumLue 09_1	CPXV_NoF1	1 CPXV_Norwayf eline	8 CPXV_Fra2001 _Nancy	9 CPXV_FraAmiens_201 6	3 CPXV_Ger2014_Huma n
	CPXV_FM2292	CPXV_FM2292	2 2 CPXV_Ger2007 Vole	CPXV_Ger91	1 CPXV_Ger1998_2	CPXV_Br	10 CPXV_Catpox5 _wv1	4 CPXV_Ger2 015_Cat1	CPXV_Nor1994 _Man	11 CPXV_NoF2	D CPXV_NoH1	CPXV_SweH1	7 CPXV_SweH2	CPXV_CheNova _DK_2014	5 CPXV_Ger1990 _2	6 CPXV_HumLue 09_1	CPXV_NoF1	1 CPXV_Norwayf eline	8 CPXV_Fra2001 _Nancy	9 CPXV_FraAmiens_201 6	3 CPXV_Ger2014_Huma n
2	CPXV_FM2292 CPXV_Ger2007_Vole	CPXV_FM2292 0.0049	2 CPXV_Ger2007 Vole	CPXV_Ger91	1 CPXV_Ger1998_2	CPXV_Br	10 CPXV_Catpox5 _wv1	4 CPXV_Ger2 015_Cat1	CPXV_Nor1994 _Man	11 CPXV_NoF2	D CPXV_NoH1	CPXV_SweH1	7 CPXV_SweH2	CPXV_CheNova _DK_2014	5 1 CPXV_Ger1990 _2	6 CPXV_HumLue 09_1	CPXV_NoF1	1 CPXV_Norwayf eline	8 CPXV_Fra2001 _Nancy	9 CPXV_FraAmiens_201 6	3 CPXV_Ger2014_Huma n
2	CPXV_FM2292 CPXV_Ger2007_Vok CPXV_Ger91	CPXV_FM2292 0.0049 0.0079	2 CPXV_Ger2007 Vole 	CPXV_Ger91	1 CPXV_Ger1998_2	CPXV_Br	10 CPXV_Catpox5 _wv1	4 CPXV_Ger2 015_Cat1	CPXV_Nor1994 _Man	11 CPXV_NoF2	D CPXV_NoH1	CPXV_SweH1	7 CPXV_SweH2	CPXV_CheNova _DK_2014	5 1 CPXV_Ger1990 _2	6 CPXV_HumLue 09_1	CPXV_NoF1	1 CPXV_Norwayf eline	8 CPXV_Fra2001 _Nancy	9 CPXV_FraAmiens_201 6	3 CPXV_Ger2014_Huma n
2	CPXV_FM2292 CPXV_Ger2007_Vole CPXV_Ger91 CPXV_Ger1998_2	CPXV_FM2292 0.0049 0.0079 0.0124	2 CPXV_Ger2007 Vole 0.0089 0.0131	CPXV_Ger91	1 CPXV_Ger1998_2	CPXV_Br	10 CPXV_Catpox5 wv1	4 CPXV_Ger2 015_Cat1	CPXV_Nor1994 Man	11 CPXV_NoF2	D CPXV_NoH1	CPXV_SweH1	7 CPXV_SweH2	CPXV_CheNova _DK_2014	5 1 CPXV_Ger1990 _2	6 CPXV_HumLue 09_1	CPXV_NoF1	1 CPXV_Norwayf eline	8 CPXV_Fra2001 Nancy	9 CPXV_FraAmiens_201 6	3 CPXV_Ger2014_Huma n
2	CPXV_FM2292 CPXV_Ger2007_Vole CPXV_Ger91 CPXV_Ger998_2 CPXV_Br	CPXV_FM2292 0.0049 0.0079 0.0124 0.0185	2 CPXV_Ger2007 Vole 0.0089 0.0131 0.0180	CPXV_Ger91	1 CPXV_Ger1998_2	CPXV_Br	10 CPXV_Catpox5 wv1	4 CPXV_Ger2 015_Cat1	CPXV_Nor1994 Man	11 CPXV_NoF2	D CPXV_NoH1	CPXV_SweH1	7 CPXV_SweH2	CPXV_CheNova _DK_2014	5 CPXV_Ger1990 _2	6 CPXV_HumLue 09_1	CPXV_NoFI	1 CPXV_Norwayf eline	8 CPXV_Fra2001 Nancy	9 CPXV_FraAmiens_201 6	3 CPXV_Ger2014_Huma n
2 1 10	CPXV_FM2292 CPXV_Ger2007_Vole CPXV_Ger91 CPXV_Ger1998_2 CPXV_Br CPXV_Br CPXV_Catpox5_wv1	CPXV_FM2292 0.0049 0.0079 0.0124 0.0185 0.0185	2 CPXV_Ger2007 _Vole 0.0089 0.0131 0.0180 0.0179	CPXV_Ger91	1 CPXV_Ger1998_2 0.0199 0.0195	CPXV_Br	10 CPXV_Catpox5 _wv1	4 CPXV_Ger2 015_Cat1	CPXV_Nor1994 Man	11 CPXV_NoF2	D CPXV_NoH1	CPXV_SweHI	7 CPXV_SweH2	CPXV_CheNova _DK_2014	5 CPXV_Ger1990 _2	6 CPXV_HumLue 09_1	CPXV_NoF1	1 CPXV_Norwayf eline	8 CPXV_Fra2001 Nancy	9 CPXV_FraAmiens_201 6	3 CPXV_Ger2014_Huma n
2 1 10 4	CPXV_FM2292 CPXV_Ger2007_Vole CPXV_Ger91 CPXV_Ger198_2 CPXV_Br CPXV_Gr198_2 CPXV_Gr198_2 CPXV_Gr195_wv1 CPXV_Gr2015_Cat1	CPXV_FM2292 0.0049 0.0079 0.0124 0.0185 0.0185 0.0152	2 CPXV_Ger2007 _Vole 0.0089 0.0131 0.0180 0.0179 0.0145	CPXV_Ger91	1 CPXV_Ger1998_2 0.0199 0.0195 0.0105	CPXV_Br	10 CPXV_Catpox5 _wv1	4 CPXV_Ger2 015_Cat1	CPXV_Nor1994 Man	11 CPXV_NoF2	D CPXV_NoH1	CPXV_SweHI	7 CPXV_SweH2	CPXV_CheNova _DK_2014	5 CPXV_Ger1990 _2	6 CPXV_HumLue 09_1	CPXV_NoF1	1 CPXV_Norwayf eline	8 CPXV_Fra2001 _Nancy	9 CPXV_FraAmiens_201 6	3 CPXV_Ger2014_Huma n
2 1 10 4	CPXV_FM2292 CPXV_Ger2007_Vole CPXV_Ger91 CPXV_Ger98_2 CPXV_Br CPXV_CatpoS_wv1 CPXV_CatpoS_wv1 CPXV_Ger2015_Cat1 CPXV_Nor1994_Man	CPXV_FM2292 0.0049 0.0079 0.0124 0.0185 0.0185 0.0185 0.0152 0.0183	2 CPXV_Ger2007 	CPXV_Ger91 0.0113 0.0186 0.0182 0.0149 0.0181	1 CPXV_Ger1998_2 0.0199 0.0195 0.0195 0.0165 0.0190	CPXV_Br	10 CPXV_Catpos5 wv1 	4 CPXV_Ger2 015_Cat1 0.0137	CPXV_Nor1994 Man	11 CPXV_NoF2	D CPXV_NoH1	CPXV_SweH1	7 CPXV_SweH2	CPXV_CheNova _DK_2014	5 CPXV_Ger1990 _2	6 CPXV_HumLue 09_1	CPXV_NoF1	1 CPXV_Norwayf eline	8 CPXV_Fra2001 _Nancy	9 CPXV_FraAmiens_201 6	3 CPXV_Ger2014_Huma n
2 1 10 4 11	CPXV_FM2292 CPXV_Ger2007_Vole CPXV_Ger91 CPXV_Ger198_2 CPXV_Ger1988_2 CPXV_Catpox5_wv1 CPXV_Catpox5_wv1 CPXV_Sc2015_Cat1 CPXV_Nor1994_Man CPXV_NoF2	CPXV_FM2292 0.0049 0.0079 0.0124 0.0185 0.0185 0.0185 0.0152 0.0183	2 CPXV_Ger2007 Vole 0.0089 0.0131 0.0180 0.0179 0.0145 0.0180 0.0179	CPXV_Ger91 0.0113 0.0186 0.0182 0.0149 0.0181 0.0181	1 CPXV_Ger1998_2 0.0199 0.0195 0.01165 0.01165 0.0190 0.0189	CPXV_Br	10 CPXV_Catpos5 wv1 	4 CPXV_Ger2 015_Cat1 0.0137 0.0137	CPXV_Nor1994 Man	11 CPXV_NoF2	D CPXV_NoH1	CPXV_SweH1	7 CPXV_SweH2	CPXV_CheNova _DK_2014	5 CPXV_Ger1990 _2	6 CPXV_HumLue 09_1	CPXV_NoF1	1 CPXV_Norwayf eline	8 CPXV_Fra2001 _Nancy	9 CPXV_FraAmiens_201 6	3 CPXV_Ger2014_Huma n
2 1 10 4 11	CPXV_FM2292 CPXV_Ger2007_Vole CPXV_Ger91 CPXV_Ger1998_2 CPXV_Br CPXV_Catpos5_wv1 CPXV_Ger2015_Cat1 CPXV_Nof1994_Man CPXV_Nof2 CPXV_Nof12	CPXV_FM2292 0.0049 0.0079 0.0124 0.0185 0.0185 0.0185 0.0183 0.0183	2 CPXV_Ger2007 Vole 0.0089 0.0131 0.0180 0.0179 0.0145 0.0180	CPXV_Ger91	1 CPXV_Ger1998_2 0.0199 0.0199 0.0195 0.0105 0.0190 0.0189 0.0190	CPXV_Br 0.0046 0.0145 0.0133 0.0133 0.0133	10 CPXV_Catpox5 wv1 0.0139 0.0139 0.0130 0.0129 0.0130	4 CPXV_Ger2 015_Cat1 0.0137 0.0137 0.0137	CPXV_Nor1994 Man	11 CPXV_NoF2	D CPXV_NoH1	CPXV_SweHI	7 CPXV_SweH2	CPXV_CheNova _DK_2014	5 CPXV_Ger1990 _2	6 CPXV_HunLue 09_1	CPXV_NoF1	1 CPXV_Norwayf eline	8 CPXV_Fra2001 Nancy	9 CPXV_FraAmiens_201 6	3 CPXV_Ger2014_Huma n
2 1 10 4 11	CPXV_FM2292 CPXV_Ger2007_Vole CPXV_Ger91 CPXV_Ger1998_2 CPXV_Br CPXV_Br CPXV_Catpox5_wv1 CPXV_Catpox5_wv1 CPXV_Nor2_Cat1 CPXV_Nor2 CPXV_Nor2 CPXV_Nor2 CPXV_Nor2	CPXV_FM2292 0.0049 0.0079 0.0124 0.0185 0.0185 0.0183 0.0183 0.0183	2 CPXV_Ger2007 Vole 0.0089 0.0131 0.0180 0.0179 0.0145 0.0180 0.0179 0.0180	CPXV_Ger91	1 CPXV_Ger1998_2 0.0199 0.0199 0.0195 0.0195 0.0195 0.0190 0.0189 0.0190	CPXV_Br 0.0046 0.0145 0.0133 0.0133 0.0133	10 CPXV_Catpox5 _wv1 0.0139 0.0130 0.0130 0.0130 0.0133	4 CPXV_Ger2 015_Cat1 0.0137 0.0137 0.0137 0.0133	CPXV_Nor1994 Man 	11 CPXV_NoF2	D CPXV_NoH1	CPXV_SweHI	7 CPXV_SweH2	CPXV_CheNova _DK_2014	5 CPXV_Ger1990 _2	6 CPXV_Humlae 09_1	CPXV_NoF1	I CPXV_Norwayf eline	8 CPXV_Fra2001 Nancy	9 CPXV_FraAmiens_201 6	3 CPXV_Ger2014_Huma n
2 1 10 4 11 7	CPXV_FM2292 CPXV_Ger2007_Vole CPXV_Ger9108_2 CPXV_Ger1998_2 CPXV_Ger2015_Cat1 CPXV_Ger2015_Cat1 CPXV_NoF2 CPXV_NoF2 CPXV_NoF2 CPXV_NoF1 CPXV_NoF1 CPXV_SweH1 CPXV_SweH2	CPXV_FM2292 0.0049 0.0079 0.0124 0.0185 0.0185 0.0183 0.0183 0.0183 0.0181 0.0181	2 CPXV_Ger2007 _Vole 0.0089 0.0131 0.0180 0.0179 0.0145 0.0180 0.0179 0.0180 0.0179 0.0180 0.0179	CPXV_Ger91 0.0113 0.0186 0.0182 0.0149 0.0181 0.0181 0.0181 0.0181	1 CPXV_Ger1998_2 0.0199 0.0195 0.0165 0.0190 0.0189 0.0190 0.0187	CPXV_Br 0.0046 0.0145 0.0133 0.0133 0.0133 0.0140	10 CPXV_Catpos5 wv1 	4 CPXV_Ger2 015_Cat1 0.0137 0.0137 0.0137 0.0133 0.0133	CPXV_Nor1994 Man 	11 CPXV_NoF2	D CPXV_NoH1	CPXV_SweH1	7 CPXV_SweH2	CPXV_CheNova _DK_2014	5 CPXV_Ger1990 _2	6 CPXV_HumLue 09_1	CPXV_NoFI	1 CPXV_Norwayf eline	8 CPXV_Fra2001 Nancy	9 CPXV_FraAmiens_201 6	3 CPXV_Ger2014_Huma n
2 1 10 4 11 7	CPXV_FM2292 CPXV_Ger2007_Vole CPXV_Ger1988_2 CPXV_Br CPXV_Br CPXV_Ger2015_Cat1 CPXV_Nor1294_Man CPXV_Nor1294_Man CPXV_NoF2 CPXV_NoF12 CPXV_SweF11 CPXV_SweF11 CPXV_SweF12 CPXV_CheNova_DK_2014	CPXV_FM2292 CPXV_FM2292 0.0049 0.0079 0.0124 0.0152 0.0185 0.0152 0.0183 0.0183 0.0183 0.0183 0.0183 0.0183 0.0183 0.0183 0.0182 0.0178 0.0182 0.0178 0.0182 0.0178 0.017	2 CPXV_Ger2007 _Vole 0.0089 0.0131 0.0180 0.0179 0.0145 0.0180 0.0179 0.0180 0.0178 0.0178 0.0178	CPXV_Ger91 0.0113 0.0186 0.0182 0.0181 0.018 0.0181 0.0181 0.018	1 CPXV_Ger1998_2 0.0199 0.0195 0.0195 0.0190 0.0189 0.0190 0.0187 0.0187 0.0183	CPXV_Br 0.0046 0.0145 0.0133 0.0133 0.0133 0.0134 0.0141 0.0141	10 CPXV_Catpos5 wv1 	4 CPXV_Ger2 015_Cat1 0.0137 0.0137 0.0133 0.0133 0.0133 0.0133	CPXV_Nor1994 Man 	11 CPXV_NoF2	D CPXV_NoH1	CPXV_SweH1	7 CPXV_SweH2	CPXV_CheNova DK_2014	5 CPXV_Ger1990 _2	6 CPXV_Humlue 09_1	CPXV_NoFI	1 CPXV_Norwayf eline	8 CPXV_Fra2001 Nancy	9 CPXV_FraAmiens_201 6	3 CPXV_Ger2014_Huma n
2 1 10 4 11 7 5	CPXV_FM2292 CPXV_Ger2007_Vole CPXV_Ger91 CPXV_Ger991 CPXV_Br CPXV_CatpoS_wv1 CPXV_Gr2015_Cat1 CPXV_Nor1994_Man CPXV_Nor1294_Man CPXV_NoF2 CPXV_NoH1 CPXV_SweH1 CPXV_SweH2 CPXV_CheNova_DK_2014 CPXV_Ger1990_2	CPXV_FM2292 CPXV_FM2292 0.0049 0.0079 0.0124 0.0185 0.0185 0.0182 0.0183 0.0183 0.0183 0.0183 0.0182 0.0182 0.0178 0.0178 0.0162	2 CPXV_Ger2007 _Vole 0.0089 0.0131 0.0180 0.0179 0.0145 0.0180 0.0179 0.0180 0.0179 0.0180 0.0179 0.0179 0.0179 0.0179 0.0179	CPXV_Ger91 0.0113 0.0182 0.0182 0.0181 0.018 0.0181 0.018 0.01	1 CPXV_Ger1998_2 0.0199 0.0195 0.0195 0.0189 0.0190 0.0189 0.0190 0.0187 0.0187 0.0187 0.0183 0.0169	CPXV_Br 0.0046 0.0145 0.0133 0.0133 0.0133 0.0140 0.0141 0.0138	10 CPXV_Catpox5 wv1 	4 CPXV_Ger2 015_Cat1 0.015_Cat1 0.0137 0.0137 0.0133 0.0133 0.0133 0.0133 0.0133	CPXV_Nor1994 Man 	11 CPXV_NoF2	D CPXV_NoH1 	CPXV_SweH1	7 CPXV_SweH2	CPXV_CheNova _DK_2014	5 CPXV_Ger1990 _2	6 CPXV_HumLue 09_1	CPXV_NoFI	1 CPXV_Norwayf eline	8 CPXV_Fra2001 Nancy	9 CPXV_FraAmiens_201 6	3 CPXV_Ger2014_Huma n
2 1 10 4 11 7 5 6	CPXV_FM2292 CPXV_Ger2007_Vole CPXV_Ger91 CPXV_Ger198_2 CPXV_Ger198_2 CPXV_Ger2015_Cat1 CPXV_Nor152 CPXV_Nor152 CPXV_Nor1994_Man CPXV_NoF2 CPXV_NoF1 CPXV_NoF2 CPXV_SweH1 CPXV_SweH2 CPXV_SweH2 CPXV_Ger1990_2 CPXV_HumLae09_1	CPXV_FM2292 CPXV_FM2292 0.0049 0.0079 0.0124 0.0185 0.0152 0.0183 0.0183 0.0183 0.0183 0.0181 0.0181 0.0181 0.0162 0.0162 0.0169	2 CPXV_Ger2007 Vole 0.0089 0.0131 0.0180 0.0179 0.0145 0.0180 0.0179 0.0145 0.0179 0.0179 0.0177 0.0177 0.0177	CPXV_Ger91 0.0113 0.0186 0.0182 0.0181 0.0181 0.0181 0.0181 0.0181 0.0181 0.0181 0.0159 0.0164	1 CPXV_Ger1998_2 0.0199 0.0195 0.0165 0.0190 0.0187 0.0187 0.0187 0.0187 0.0187 0.0187	CPXV_Br 0.0046 0.0145 0.0133 0.0133 0.0133 0.0140 0.0140 0.0140 0.0118 0.0152	10 CPXV_Catpox5 wv1  0.0139 0.0130 0.0139 0.0130 0.0133 0.0134 0.0134 0.0134 0.0134 0.0140	4 CPXV_Ger2 015_Cat1 0.0137 0.0137 0.0133 0.0133 0.0133 0.0133 0.0133	CPXV_Nor1994 Man 	11 CPXV_NoF2 0.0001 0.00138 0.0138 0.0138 0.0138 0.0143 0.0143	D CPXV_NoH1	CPXV_SweH1	7 CPXV_SweH2	CPXV_CheNova _DK_2014	5 CPXV_Ger1990 _2	6 CPXV_HumLue 09_1	CPXV_NoF1	1 CPXV_Norwayf eline	8 CPXV_Fra2001 Nancy	9 CPXV_FraAmiens_201 6	3 CPXV_Ger2014_Huma n
2 1 10 4 11 7 5 6	CPXV_FM2292 CPXV_Ger2007_Vole CPXV_Ger91 CPXV_Ger98_2 CPXV_Br CPXV_Car2015_Cat1 CPXV_No1994_Man CPXV_NoF2 CPXV_NoF2 CPXV_NoF1 CPXV_SweH1 CPXV_SweH2 CPXV_CheNova_DK_2014 CPXV_En190_2 CPXV_HunLa09_1 CPXV_NoF1	CPXV_FM2292 0.0049 0.0079 0.0124 0.0185 0.0185 0.0185 0.0183 0.0183 0.0183 0.0181 0.0182 0.0182 0.0182 0.0162 0.0162 0.0162 0.0162 0.0162 0.0169 0.0181 0.0181 0.0182 0.016 0.016 0.01 0.01	2 CPXV_Ger2007 Vole 0.0089 0.0131 0.0180 0.0179 0.0145 0.0179 0.0179 0.0179 0.0179 0.0177 0.0161 0.0168 0.0177	CPXV_Ger91 0.0113 0.0186 0.0189 0.0181 0.018 0.0181 0.018 0.01	1 CPXV_Ger1998_2 0.0199 0.0199 0.0195 0.0195 0.0195 0.0195 0.0190 0.0187 0.0187 0.0183 0.0169 0.0174 0.0189	CPXV_Br 0.0046 0.0145 0.0133 0.0133 0.0133 0.0140 0.0141 0.0141 0.0152 0.0152 0.0145	10 CPXV_Catpox5 wv1 0.0139 0.0139 0.0130 0.0133 0.0134 0.0134 0.0134 0.0134 0.0147 0.0140 0.0132	4 CPXV_Ger2 015_Cat1 0.0137 0.0137 0.0137 0.0133 0.0133 0.0133 0.0133 0.0101 0.0114 0.0135	CPXV_Nor1994 Man 	11 CPXV_NoF2 0.0001 0.0138 0.0138 0.0138 0.0138 0.0138 0.0138	D CPXV_NoH1 CPXV_NoH1 CPXV_NoH1 CPXV_00H1 CPXV	CPXV_SweH1	7 CPXV_SweH2	CPXV_CheNova _DK_2014	5 CPXV_Ger1990 _2	6 CPXV_HumLue 09_1	CPXV_NoF1	I CPXV_Norwayf cline cli	8 CPXV_Fra2001 Nancy	9 CPXV_FraAmiens_201 6	3 CPXV_Ger2014_Huma n
2 1 10 4 11 7 5 6 11	CPXV_FM2292 CPXV_Ger2007_Vole CPXV_Ger910 CPXV_Ger9198_2 CPXV_Bat CPXV_Catpox5_wv1 CPXV_Nor1994_Man CPXV_Nor1994_Man CPXV_Nor1994_Man CPXV_Nor1904_Man CPXV_Nor1904_Man CPXV_Nor1904_Man CPXV_SweH1 CPXV_SweH1 CPXV_SweH2 CPXV_SweH2 CPXV_SweH2 CPXV_SweH2 CPXV_SweH2 CPXV_SweH2 CPXV_SweH2 CPXV_SweH2 CPXV_SweH2 CPXV_SweH2 CPXV_SweH2 CPXV_SweH2 CPXV_SweH2 CPXV_SweH2 CPXV_SweH2 CPXV_SweH2 CPXV_SweH2 CPXV_SweH3 CPXV_SweH4 C	CPXV_FM292 CPXV_FM292 0.0079 0.0124 0.0185 0.0185 0.0183 0.0183 0.0183 0.0181 0.0182 0.0178 0.0162 0.0162 0.0160	2 CPXV_Ger2007 _Vole 0.0089 0.0131 0.0180 0.0179 0.0145 0.0180 0.0179 0.0179 0.0178 0.0179 0.0177 0.0161 0.0168	CPXV_Ger91 0.0113 0.0118 0.0182 0.0184 0.0181 0.0181 0.0181 0.0181 0.0181 0.0181 0.0181 0.0159 0.0159 0.0165	1 CPXV_Ger1998_2 0.0199 0.0195 0.0165 0.0190 0.0189 0.0189 0.0189 0.0187 0.0187 0.0187 0.0183 0.0169 0.0174 0.0189 0.0174	CPXV_Br 0.0046 0.0145 0.0133 0.0133 0.0133 0.0133 0.0140 0.0152 0.0152 0.0152 0.0152 0.0152 0.0162	10 CPXV_Catpos5 wv1 	4 CPXV_Ger2 015_Cat1 0.0137 0.0137 0.0137 0.0133 0.0133 0.0133 0.0133 0.0133 0.0133 0.0110 0.0114	CPXV_Nor1994 Man 	11 CPXV_NoF2 0.0001 0.0138 0.0138 0.0138 0.0138 0.0138 0.0143 0.0143 0.01136 0.0028	D CPXV_NoH1 CPXV	CPXV_SweHI	7 CPXV_SweH2 CPXV_SweH2 00051 0.0124 0.0124 0.0112 0.0141 0.0133	CPXV_CheNova _DK_2014	5 CPXV_Ger1990 _2	6 CPXV_HumLae 09_1	CPXV_NoFI	1 CPXV_Norwayf eline	8 CPXV_Fra2001 Nanxy	9 CPXV_FraAmiens_201 6	3 CPXV_Ger2014_Huma n
2 1 10 4 11 7 5 6 11 8	CPXV_FM2292 CPXV_Ger2007_Vole CPXV_Ger198,2 CPXV_Br CPXV_Ger198,2 CPXV_Gr2015_Cat1 CPXV_Nor1994_Man CPXV_Nor1994_Man CPXV_Nor1994_Man CPXV_Nor1994_Man CPXV_Nor1994_Man CPXV_Nor1994_Man CPXV_Nor1994_Man CPXV_Nor1994_Man CPXV_Nor1994_Man CPXV_Nor1994_Man CPXV_CheNova_DK_2014 CPXV_CheNova_DK_2014 CPXV_Ger1990_2 CPXV_MeII CPXV_Nor191 CPXV_NOF1 CP	CPXV_FM2292 CPXV_FM2292 0.0049 0.0079 0.0124 0.0185 0.0185 0.0185 0.0183 0.0183 0.0183 0.0183 0.0183 0.0184 0.0182 0.0178 0.0162 0.0169 0.0160 0.016 0.016 0.016 0.016 0.016 0.016 0.016 0.016 0.016 0.016 0.01 0.01	2 CPXV_Ger2007 _Vole 0.0089 0.0131 0.0180 0.0179 0.0145 0.0180 0.0179 0.0180 0.0179 0.0178 0.0177 0.0161 0.0168 0.0176	CPXV_Ger91 0.0113 0.0186 0.0182 0.0149 0.0181 0.0181 0.0181 0.0181 0.0181 0.0181 0.019 0.0164 0.0165 0.015 0.015 0.01 0.01	1 CPXV_Ger1998_2 0.0199 0.0195 0.0195 0.0190 0.0189 0.0190 0.0187 0.0187 0.0183 0.0169 0.0183 0.0169 0.0174	CPXV_Br 0.0046 0.0145 0.0133 0.0133 0.0133 0.0130 0.0141 0.0145 0.0145 0.0145 0.0145 0.0123 0.0145	10 CPXV_Catpos5 wv1 	4 CPXV_Ger2 015_Cat1 0.0137 0.0137 0.0133 0.0133 0.0133 0.0133 0.0133 0.0113 0.0114 0.0114 0.0127 0.0116	CPXV_Nor1994 Man 	11 CPXV_NoF2	D CPXV_NoH1 CPXV	CPXV_SweH1	7 CPXV_SweH2 0.00051 0.0124 0.0112 0.0112 0.0133 0.0133	CPXV_CheNova DK_2014	5 CPXV_Ger1990 _2	6 CPXV_HumLue 09_1	CPXV_NoFI	1 CPXV_Norwayi eline	8 CPXV_Fra2001 Nancy	9 CPXV_FraAmiens_201 6	3 CPXV_Ger2014_Huma n
2 1 10 4 11 7 5 6 11 8 9	CPXV_FM2292 CPXV_Ger2007_Vole CPXV_Ger391 CPXV_Ger391 CPXV_Ber CPXV_Ber CPXV_Ser2015_Cat1 CPXV_Nor1994_Man CPXV_Nor1294_Man CPXV_Nor12 CPXV_Nor12 CPXV_Nor12 CPXV_SweH1 CPXV_SweH1 CPXV_Ger1990_2 CPXV_Ger1990_2 CPXV_ImnLac99_1 CPXV_ImnLac9_1 CPXV_NoF1 CPXV_Fra2001_Nancy CPXV_Fra2001_Nancy	CPXV_FM2292 CPXV_FM2292 0.0049 0.0079 0.0124 0.0185 0.0185 0.0183 0.0183 0.0183 0.0183 0.0181 0.0182 0.0178 0.0162 0.0169 0.0160 0.0160 0.0160 0.0160 0.0166 0.016 0.01 0.01	2 CPXV_Ger2007 _Vole 0.0089 0.0131 0.0180 0.0179 0.0145 0.0180 0.0179 0.0145 0.0180 0.0179 0.0178 0.0177 0.0161 0.0166 0.0165	CPXV_Ger91 0.0113 0.0186 0.0182 0.0181 0.0181 0.0181 0.0181 0.0181 0.0181 0.0181 0.0155 0.0164 0.0175 0.0155 0.0161	1 CPXV_Ger1998_2 0.0199 0.0195 0.0195 0.0195 0.0190 0.0189 0.0187 0.0187 0.0187 0.0183 0.0169 0.0174 0.0189 0.0180 0.0174 0.0179	CPXV_Br 0.0046 0.0145 0.0133 0.0133 0.0133 0.0133 0.0141 0.0138 0.0152 0.0145 0.0145 0.0132 0.0145 0.0131	10 CPXV_Catpos5 wv1 	4 CPXV_Ger2 015_Cat1 0.0137 0.0137 0.0133 0.0133 0.0133 0.0133 0.0133 0.0114 0.0114 0.0125	CPXV_Nor1994 Man 	11 CPXV_NoF2 	D CPXV_NoH1 CPXV	CPXV_SweHI	7 CPXV_SweH2 0.0051 0.0124 0.0112 0.0131 0.0134 0.0134 0.0139	CPXV_CheNova _DK_2014	5 CPXV_Ger1990 _2 	6 CPXV_HumLue 09_1	CPXV_NoFI	1 CPXV_Norwayf eline	8 CPXV_Fra2001 	9 CPXV_FraAmiens_201 6	3 CPXV_Ger2014_Huma n

**Table S11.** Patristic and genetic distances within ECTV-Abatino-like calculated from the Maximum likelihood (ML) and Bayesian inference (BI) trees of 62 conserved genes, 87 OPXV whole genomes, core genomes and orthologous genes and their alignments, respectively.

			2	Patristic distances			
	ML tree of 62 conserved genes	BI tree of 62 conserved genes	ML tree of 87 OPXV whole genomes	BI tree of 87 OPXV whole genomes	ML tree of 87 OPXV core genomes	BI tree of 87 OPXV core genomes	ML tree of OPXV orthologous genes
CPXV-No-H2 -	0.016	0.016	0.022	0.022	0.022	0.021	0.022
CPXV_GerMygEK938_17	0.010	0.010	0.022	0.022	0.022	0.021	0.022
CPXV-No-H2 -	0.016	0.016	0.022	0.022	0.022	0.021	0.022
CPXV_Ger2010_MKY	0.010	0.010	0.022	0.022	0.022	0.021	0.022
CPXV_GerMygEK938_17 -	0.004	0.004	0.004	0.004	0.004	0.004	0.004
CPXV_Ger2010_MKY	0.004	0.004	0.004	0.004	0.004	0.004	0.004
TATV - CMLV	0.011	0.011	0.012	0.012	0.012	0.012	0.013
TATV-VARV	0.018	0.018	0.019	0.019	0.021	0.020	0.018

TATV: Taterapox virus, CMLV:Camelpox virus, VARV: Variola virus

		Genetic d	listances	•
	62 conserved genes	87 OPXV whole genomes	87 OPXV core genomes	OPXV orthologous genes
CPXV-No-H2 - CPXV_GerMygEK938_17	0.011	0.016	0.016	0.015
CPXV-No-H2 - CPXV_Ger2010_MKY	0.011	0.016	0.016	0.016
CPXV_GerMygEK938_17 - CPXV_Ger2010_MKY	0.003	0.003	0.003	0.003
TATV - CMLV	0.008	0.009	0.009	0.009
TATV-VARV	0.012	0.014	0.015	0.014

TATV: Taterapox virus, CMLV:Camelpox virus, VARV: Variola virus

	ML tree	of 62 conserved genes		
	CPXV_Fin2000_Man_2000	CPXV_Gri_1990	CPXV_HumLit08_1_2008	CPXV_Aus_1999
CPXV_Fin2000_Man_2000				
CPXV_Gri_1990	0.0090			
CPXV_HumLit08_1_2008	0.0181	0.0182		
CPXV_Aus_1999	0.0201	0.0203	0.0150	
	BI tree	of 62 conserved genes		
	CPXV_Fin2000_Man_2000	CPXV_Gri_1990	CPXV_HumLit08_1_2008	CPXV_Aus_1999
CPXV_Fin2000_Man_2000				
CPXV_Gri_1990	0.0089			
CPXV_HumLit08_1_2008	0.0179	0.0180		
CPXV_Aus_1999	0.0199	0.0200	0.0148	
	ML tree of	87 OPXV whole genom	es	
	CPXV_HumLit08_1	CPXV_Aus_1999	CPXV_Fin2000_Man	CPXV_Gri
CPXV_HumLit08_1				
CPXV_Aus_1999	0.0185			
CPXV_Fin2000_Man	0.0201	0.0185		
CPXV_Gri	0.0207	0.0191	0.0094	
	BI tree of 8	7 OPXV whole genome	S	
	CPXV_Gri	CPXV_Fin2000_Man	CPXV_Aus_1999	CPXV_HumLit08_1
CPXV_Gri				
CPXV_Fin2000_Man	0.0092			
CPXV_Aus_1999	0.0189	0.0183		
CPXV_HumLit08_1	0.0205	0.0199	0.0184	
	ML tree of	87 OPXV core genome	S	
	CPXV_HumLit08_1	CPXV_Aus_1999	CPXV_Fin2000_Man	CPXV_Gri
CPXV_HumLit08_1				
CPXV_Aus_1999	0.0186			
CPXV_Fin2000_Man	0.0201	0.0182		
CPXV_Gri	0.0208	0.0189	0.0094	
	BI tree of	87 OPXV core genome	S	
	CPXV_Gri	CPXV_Fin2000_Man	CPXV_Aus_1999	CPXV_HumLit08_1
CPXV_Gri				
CPXV_Fin2000_Man	0.0092			
CPXV_Aus_1999	0.0187	0.0180		
CPXV_HumLit08_1	0.0205	0.0199	0.0184	
	ML tree of	OPXV orthologous gene	es	
	CPXV_HumLit08_1	CPXV_Gri	CPXV_Fin2000_Man	CPXV_Aus_1999
CPXV_HumLit08_1				
CPXV_Gri	0.0194			
CPXV_Fin2000_Man	0.0179	0.0097		
CPXV_Aus_1999	0.0192	0.0197	0.0182	

**Table S12.** Patristic distances within VACV-like calculated from the Maximum likelihood (ML) and Bayesian inference (BI) trees of 62 conserved genes, 87 OPXV whole genomes, core genomes and orthologous genes.

		Α		
	CPXV_Gri	CPXV_Fin2000_Man	CPXV_Aus_1999	CPXV_HumLit08_1
CPXV_Gri				
CPXV_Fin2000_Man	0.006			
CPXV_Aus_1999	0.012	0.012		
CPXV_HumLit08_1	0.010	0.010	0.010	
		В		
	CPXV_Gri	CPXV_Fin2000_Man	CPXV_HumLit08_1	CPXV_Aus_1999
CPXV_Gri				
CPXV_Fin2000_Man	0.007			
CPXV_HumLit08_1	0.013	0.012		
CPXV_Aus_1999	0.012	0.012	0.013	
		С		
	CPXV_Gri	CPXV_Fin2000_Man	CPXV_HumLit08_1	CPXV_Aus_1999
CPXV_Gri				
CPXV_Fin2000_Man	0.007			
CPXV_HumLit08_1	0.013	0.012		
CPXV_Aus_1999	0.012	0.012	0.013	
		D		
	CPXV_Gri	CPXV_Fin2000_Man	CPXV_Aus_1999	CPXV_HumLit08_1
CPXV_Gri				
CPXV_Fin2000_Man	0.007			
CPXV_Aus_1999	0.012	0.012		
CPXV_HumLit08_1	0.013	0.011	0.013	

**Table S13**. Genetic distances within VACV-like clade estimated by p-distances from the alignment of 62 conserved genes (A), 87 OPXV whole genomes (B), core genomes(C), orthologous genes (D).

**Table S14**. Patristic and genetic distances within CPXV-like 1 calculated from the Maximum likelihood (ML) and Bayesian inference (BI) trees of 87 OPXV whole genomes, core genomes and orthologous genes and their alignments, respectively.

				Patristic distance	s		
	ML tree of 62 conserved genes	BI tree of 62 conserved genes	ML tree of 87 OPXV whole genomes	BI tree of 87 OPXV whole genomes	ML tree of 87 OPXV core genomes	BI tree of 87 OPXV core genomes	ML tree of OPXV orthologous genes
CPXV_Ger_1971_EP1 - CPXV-like 1*	0.0229	0.0219	0.0193	0.0191	0.0187	0.0185	0.0201
TATV - CMLV	0.0114	0.0113	0.0121	0.0120	0.0123	0.0121	0.0130
TATV-VARV	0.0179	0.0175	0.0193	0.0191	0.0207	0.0204	0.0182

\* All CPXV-like1 strains without CPXV\_Ger\_1971\_EP1

		Genetic distance	es	
	OPXV conserved genes	87 OPXV whole genomes	87 OPXV core genomes	OPXV orthologou s genes
CPXV_Ger_1971_EP1 - CPXV-like 1*	0.0105	0.0102	0.0101	0.0105
TATV - CMLV	0.0080	0.0090	0.0092	0.0094
TATV-VARV	0.0121	0.0141	0.0152	0.0136

\* All CPXV-like1 strains without CPXV\_Ger\_1971\_EP1

**Table S15.** Patristic distances within CPXV-like 1 calculated from the Maximum likelihood (ML) and Bayesian inference (BI) trees of 62 conserved genes, 87 OPXV whole genomes, core genomes and orthologous genes.

									M	IL tree of 62	conserved g	enes												
	CPXV_Ger 2010_Raco on_2010	CPXV_EleG ri07_1_200 7	i CPXV_Ger 2014_Cat1 _2014	CPXV_Ger 2017_Vole _2017	CPXV_Ger 2017_Alpa ca2_2017	CPXV_Ger 2014_Cat2 _2014	CPXV_Hu mLan08_1 _2008	CPXV_JagK re08_1_20 08	CPXV_Mo nKre08_4_ 2008	CPXV_JagK re08_2_20 08	CPXV_Ger 2015_Cat2 _2015	CPXV_Ger 2015_Hum an2_2015	CPXV_Ger 2012_Alpa ca_2012	CPXV_Ama _2015	CPXV_CatP ot07_1_20 07	CPXV_Hu mMag07_ 1_2007	CPXV_Bea Ber04_1_2 004	CPXV_Ger 1980_EP4_ 1980	CPXV_Ger 2010_Rat_ 2010	CPXV_Ger 2002_MKY _2002	CPXV_Ger 2013_Alpa ca_2013	CPXV_Hu mBer07_1 _2007	CPXV_Ger 2010_Alpa ca_2010	CPXV_Ger 1971_EP1_ 1971
CPXV Ger2010 Racoon 2010																								
CPXV EleGri07 1 2007	0.016																							
CPXV Ger2014 Cat1 2014	0.020	0.008																						
CPXV Ger2017 Vole 2017	0.015	0.006	0.010																					
CPXV Ger2017 Alpaca2 2017	0.016	0.007	0.011	0.005																				
CPXV Ger2014 Cat2 2014	0.024	0.014	0.018	0.012	0.010																			
CPXV HumLan08 1 2008	0.023	0.014	0.018	0.012	0.010	0.015																		
CPXV JagKre08 1 2008	0.023	0.014	0.018	0.012	0.010	0.015	0.000																	
CPXV_MonKre08_4_2008	0.023	0.014	0.018	0.012	0.010	0.015	0.000	0.000																
CPXV_JagKre08_2_2008	0.023	0.014	0.018	0.012	0.010	0.015	0.000	0.000	0.000															
CPXV_Ger2015_Cat2_2015	0.019	0.010	0.014	0.008	0.006	0.011	0.009	0.008	0.008	0.008														
CPXV_Ger2015_Human2_2015	0.020	0.011	0.015	0.009	0.008	0.015	0.015	0.015	0.015	0.015	0.011													
CPXV_Ger2012_Alpaca_2012	0.018	0.009	0.012	0.006	0.005	0.012	0.012	0.012	0.012	0.012	0.008	0.004												
CPXV_Ama_2015	0.015	0.008	0.012	0.008	0.009	0.016	0.016	0.016	0.016	0.016	0.012	0.013	0.010											
CPXV_CatPot07_1_2007	0.015	0.009	0.013	0.008	0.009	0.017	0.017	0.017	0.017	0.017	0.013	0.014	0.011	0.004										
CPXV_HumMag07_1_2007	0.016	0.009	0.013	0.009	0.010	0.017	0.017	0.017	0.017	0.017	0.013	0.014	0.011	0.004	0.001									
CPXV_BeaBer04_1_2004	0.016	0.010	0.014	0.010	0.011	0.018	0.018	0.018	0.018	0.018	0.014	0.015	0.012	0.005	0.002	0.002								
CPXV_Ger1980_EP4_1980	0.032	0.025	0.029	0.025	0.026	0.033	0.033	0.033	0.033	0.033	0.029	0.030	0.027	0.020	0.017	0.018	0.016							
CPXV_Ger2010_Rat_2010	0.028	0.022	0.026	0.021	0.023	0.030	0.030	0.030	0.030	0.030	0.026	0.027	0.024	0.017	0.014	0.014	0.012	0.007						
CPXV_Ger2002_MKY_2002	0.028	0.021	0.025	0.021	0.022	0.029	0.029	0.029	0.029	0.029	0.025	0.026	0.023	0.016	0.013	0.014	0.012	0.011	0.008					
CPXV_Ger2013_Alpaca_2013	0.027	0.021	0.025	0.021	0.022	0.029	0.029	0.029	0.029	0.029	0.025	0.026	0.023	0.016	0.013	0.014	0.011	0.011	0.008	0.004				
CPXV_HumBer07_1_2007	0.016	0.009	0.013	0.009	0.010	0.017	0.017	0.017	0.017	0.017	0.013	0.014	0.011	0.004	0.001	0.002	0.002	0.017	0.014	0.013	0.013			
CPXV_Ger2010_Alpaca_2010	0.015	0.013	0.017	0.012	0.013	0.021	0.020	0.020	0.020	0.020	0.016	0.017	0.015	0.012	0.012	0.013	0.013	0.028	0.025	0.025	0.024	0.013		
CPXV_Ger1971_EP1_1971	0.016	0.019	0.022	0.018	0.019	0.026	0.026	0.026	0.026	0.026	0.022	0.023	0.021	0.017	0.018	0.019	0.019	0.034	0.031	0.030	0.030	0.018	0.017	
	1	1	1	1	-		1		В	I tree of 62	conserved g	enes	1	1	1	1	1	1	1		1	1	1	1
	CPXV_Ger	CPXV_Ger	CPXV_Ger	CPXV_Ger	CPXV_Ger	CPXV_Ger	CPXV_Hu	CPXV_JagK	CPXV_JagK	CPXV_Mo	CPXV_EleG	CPXV_Ger	CPXV_Ama	CPXV_Bea	CPXV_Ger	CPXV_Ger	CPXV_Ger	CPXV_Ger	CPXV_Hu	CPXV_CatP	CPXV_Hu	CPXV_Ger	CPXV_Ger	CPXV_Ger
	CPXV_Ger 2014_Cat2 _2014	CPXV_Ger 2012_Alpa ca_2012	CPXV_Ger 2015_Hum an2_2015	CPXV_Ger 2015_Cat2 _2015	CPXV_Ger 2017_Alpa ca2_2017	CPXV_Ger 2017_Vole _2017	CPXV_Hu mLan08_1 _2008	CPXV_JagK re08_1_20 08	CPXV_JagK re08_2_20 08	CPXV_Mo nKre08_4_ 2008	CPXV_EleG ri07_1_200 7	CPXV_Ger 2014_Cat1 _2014	CPXV_Ama _2015	CPXV_Bea Ber04_1_2 004	CPXV_Ger 1980_EP4_ 1980	CPXV_Ger 2010_Rat_ 2010	CPXV_Ger 2002_MKY _2002	CPXV_Ger 2013_Alpa ca_2013	CPXV_Hu mBer07_1 _2007	CPXV_CatP ot07_1_20 07	CPXV_Hu mMag07_ 1_2007	CPXV_Ger 2010_Alpa ca_2010	CPXV_Ger 2010_Raco on_2010	CPXV_Ger 1971_EP1_ 1971
CPXV Ger2014 Cat2 2014	CPXV_Ger 2014_Cat2 _2014	CPXV_Ger 2012_Alpa ca_2012	CPXV_Ger 2015_Hum an2_2015	CPXV_Ger 2015_Cat2 _2015	CPXV_Ger 2017_Alpa ca2_2017	CPXV_Ger 2017_Vole _2017	CPXV_Hu mLan08_1 _2008	CPXV_JagK re08_1_20 08	CPXV_JagK re08_2_20 08	CPXV_Mo nKre08_4_ 2008	CPXV_EleG ri07_1_200 7	CPXV_Ger 2014_Cat1 _2014	CPXV_Ama _2015	CPXV_Bea Ber04_1_2 004	CPXV_Ger 1980_EP4_ 1980	CPXV_Ger 2010_Rat_ 2010	CPXV_Ger 2002_MKY _2002	CPXV_Ger 2013_Alpa ca_2013	CPXV_Hu mBer07_1 _2007	CPXV_CatP ot07_1_20 07	CPXV_Hu mMag07_ 1_2007	CPXV_Ger 2010_Alpa ca_2010	CPXV_Ger 2010_Raco on_2010	CPXV_Ger 1971_EP1_ 1971
CPXV_Ger2014_Cat2_2014 CPXV_Ger2012_Alpaca_2012	CPXV_Ger 2014_Cat2 _2014	CPXV_Ger 2012_Alpa ca_2012	CPXV_Ger 2015_Hum an2_2015	CPXV_Ger 2015_Cat2 _2015	CPXV_Ger 2017_Alpa ca2_2017	CPXV_Ger 2017_Vole _2017	CPXV_Hu mLan08_1 _2008	CPXV_JagK re08_1_20 08	CPXV_JagK re08_2_20 08	CPXV_Mo nKre08_4_ 2008	CPXV_EleG ri07_1_200 7	CPXV_Ger 2014_Cat1 _2014	CPXV_Ama _2015	CPXV_Bea Ber04_1_2 004	CPXV_Ger 1980_EP4_ 1980	CPXV_Ger 2010_Rat_ 2010	CPXV_Ger 2002_MKY _2002	CPXV_Ger 2013_Alpa ca_2013	CPXV_Hu mBer07_1 _2007	CPXV_CatP ot07_1_20 07	CPXV_Hu mMag07_ 1_2007	CPXV_Ger 2010_Alpa ca_2010	CPXV_Ger 2010_Raco on_2010	CPXV_Ger 1971_EP1_ 1971
CPXV_Ger2014_Cat2_2014 CPXV_Ger2012_Alpaca_2012 CPXV_Ger2015_Human2_2015	CPXV_Ger 2014_Cat2 _2014	CPXV_Ger 2012_Alpa ca_2012	CPXV_Ger 2015_Hum an2_2015	CPXV_Ger 2015_Cat2 _2015	CPXV_Ger 2017_Alpa ca2_2017	CPXV_Ger 2017_Vole _2017	CPXV_Hu mLan08_1 _2008	CPXV_JagK re08_1_20 08	CPXV_JagK re08_2_20 08	CPXV_Mo nKre08_4_ 2008	CPXV_EleG ri07_1_200 7	CPXV_Ger 2014_Cat1 _2014	CPXV_Ama _2015	CPXV_Bea Ber04_1_2 004	CPXV_Ger 1980_EP4_ 1980	CPXV_Ger 2010_Rat_ 2010	CPXV_Ger 2002_MKY _2002	CPXV_Ger 2013_Alpa ca_2013	CPXV_Hu mBer07_1 _2007	CPXV_CatP ot07_1_20 07	CPXV_Hu mMag07_ 1_2007	CPXV_Ger 2010_Alpa ca_2010	CPXV_Ger 2010_Raco on_2010	CPXV_Ger 1971_EP1_ 1971
CPXV_Ger2014_Cat2_2014 CPXV_Ger2012_Alpaca_2012 CPXV_Ger2015_Human2_2015 CPXV_Ger2015_Cat2_2015	CPXV_Ger 2014_Cat2 _2014 0.010 0.013 0.013	CPXV_Ger 2012_Alpa ca_2012 0.004	CPXV_Ger 2015_Hum an2_2015	CPXV_Ger 2015_Cat2 _2015	CPXV_Ger 2017_Alpa ca2_2017	CPXV_Ger 2017_Vole _2017	CPXV_Hu mLan08_1 _2008	CPXV_JagK re08_1_20 08	CPXV_JagK re08_2_20 08	CPXV_Mo nKre08_4_ 2008	CPXV_EleG ri07_1_200 7	CPXV_Ger 2014_Cat1 _2014	CPXV_Ama _2015	CPXV_Bea Ber04_1_2 004	CPXV_Ger 1980_EP4_ 1980	CPXV_Ger 2010_Rat_ 2010	CPXV_Ger 2002_MKY _2002	CPXV_Ger 2013_Alpa ca_2013	CPXV_Hu mBer07_1 _2007	CPXV_CatP ot07_1_20 07	CPXV_Hu mMag07_ 1_2007	CPXV_Ger 2010_Alpa ca_2010	CPXV_Ger 2010_Raco on_2010	CPXV_Ger 1971_EP1_ 1971
CPXV_Ger2014_Cat2_2014 (PXV_Ger2012_Alpaca_2012 (PXV_Ger2015_Human2_2015 (PXV_Ger2015_Cat2_2015 (PXV_Ger2017_Alpaca2_2017	CPXV_Ger 2014_Cat2 _2014 0.010 0.013 0.013 0.010	CPXV_Ger 2012_Alpa ca_2012 0.004 0.008 0.005	CPXV_Ger 2015_Hum an2_2015	CPXV_Ger 2015_Cat2 _2015	CPXV_Ger 2017_Alpa ca2_2017	CPXV_Ger 2017_Vole _2017	CPXV_Hu mLan08_1 _2008	CPXV_JagK re08_1_20 08	CPXV_JagK re08_2_20 08	CPXV_Mo nKre08_4_ 2008	CPXV_EleG ri07_1_200 7	CPXV_Ger 2014_Cat1 _2014	CPXV_Ama _2015	CPXV_Bea Ber04_1_2 004	CPXV_Ger 1980_EP4_ 1980	CPXV_Ger 2010_Rat_ 2010	CPXV_Ger 2002_MKY _2002	CPXV_Ger 2013_Alpa ca_2013	CPXV_Hu mBer07_1 _2007	CPXV_CatP ot07_1_20 07	CPXV_Hu mMag07_ 1_2007	CPXV_Ger 2010_Alpa ca_2010	CPXV_Ger 2010_Raco on_2010	CPXV_Ger 1971_EP1_ 1971
CPXV_Ger2014_Cat2_2014 (PXV_Ger2012_Alpaca_2012 CPXV_Ger2015_Human2_2015 CPXV_Ger2015_Cat2_2015 CPXV_Ger2017_Alpaca2_2017 (PXV_Ger2017_Vole_2017	CPXV_Ger 2014_Cat2 _2014 0.010 0.013 0.013 0.010 0.012	CPXV_Ger 2012_Alpa ca_2012 0.004 0.008 0.005 0.006	CPXV_Ger 2015_Hum an2_2015 	CPXV_Ger 2015_Cat2 _2015	CPXV_Ger 2017_Alpa ca2_2017	CPXV_Ger 2017_Vole _2017	CPXV_Hu mLan08_1 _2008	CPXV_JagK re08_1_20 08	CPXV_JagK re08_2_20 08	CPXV_Mo nKre08_4_ 2008	CPXV_EleG ri07_1_200 7	CPXV_Ger 2014_Cat1 _2014	CPXV_Ama _2015	CPXV_Bea Ber04_1_2 004	CPXV_Ger 1980_EP4_ 1980	CPXV_Ger 2010_Rat_ 2010	CPXV_Ger 2002_MKY _2002	CPXV_Ger 2013_Alpa ca_2013	CPXV_Hu mBer07_1 _2007	CPXV_CatP ot07_1_20 07	CPXV_Hu mMag07_ 1_2007	CPXV_Ger 2010_Alpa ca_2010	CPXV_Ger 2010_Raco on_2010	CPXV_Ger 1971_EP1_ 1971
CPXV_Ger2014_Cat2_2014 CPXV_Ger2012_Alpaca_2012 CPXV_Ger2015_Human2_2015 CPXV_Ger2015_Cat2_2015 CPXV_Ger2017_Alpaca2_2017 CPXV_Ger2017_Vole_2017 CPXV_HumLan08_1_2008	CPXV_Ger 2014_Cat2 _2014 0.010 0.013 0.013 0.010 0.012 0.018	CPXV_Ger 2012_Alpa ca_2012 0.004 0.008 0.005 0.006 0.013	CPXV_Ger 2015_Hum an2_2015 0.011 0.008 0.009 0.015	CPXV_Ger 2015_Cat2 _2015 _2015 	CPXV_Ger 2017_Alpa ca2_2017	CPXV_Ger 2017_Vole _2017 	CPXV_Hu mLan08_1 2008	CPXV_JagK re08_1_20 08	CPXV_JagK re08_2_20 08	CPXV_Mo nKre08_4_ 2008	CPXV_EleG ri07_1_200 7	CPXV_Ger 2014_Cat1 _2014	CPXV_Ama _2015	CPXV_Bea Ber04_1_2 004	CPXV_Ger 1980_EP4_ 1980	CPXV_Ger 2010_Rat_ 2010	CPXV_Ger 2002_MKY _2002	CPXV_Ger 2013_Alpa ca_2013	CPXV_Hu mBer07_1 _2007	CPXV_CatP ot07_1_20 07	CPXV_Hu mMag07_ 1_2007	CPXV_Ger 2010_Alpa ca_2010	CPXV_Ger 2010_Raco on_2010	CPXV_Ger 1971_EP1_ 1971
CPXV_Ger2014_Cat2_2014 CPXV_Ger2012_Alpaca_2012 CPXV_Ger2015_Human2_2015 CPXV_Ger2015_Cat2_2015 CPXV_Ger2017_Alpaca2_2017 CPXV_Ger2017_Vole_2017 CPXV_HumLan08_1_2008 CPXV_JagKre08_1_2008	CPXV_Ger 2014_Cat2 _2014 0.010 0.013 0.013 0.010 0.012 0.018 0.018	CPXV_Ger 2012_Alpa ca_2012 0.004 0.008 0.005 0.006 0.013 0.013	CPXV_Ger 2015_Hum an2_2015 0.011 0.008 0.009 0.015 0.015	CPXV_Ger 2015_Cat2 _2015 	CPXV_Ger 2017_Alpa ca2_2017	CPXV_Ger 2017_Vole _2017	CPXV_Hu mLan08_1 2008	CPXV_JagK re08_1_20 08	CPXV_JagK re08_2_20 08	CPXV_Mo nKre08_4_ 2008	CPXV_EleG ri07_1_200 7	CPXV_Ger 2014_Cat1 _2014	CPXV_Ama _2015	CPXV_Bea Ber04_1_2 004	CPXV_Ger 1980_EP4_ 1980	CPXV_Ger 2010_Rat_ 2010	CPXV_Ger 2002_MKY _2002	CPXV_Ger 2013_Alpa ca_2013	CPXV_Hu mBer07_1 _2007	CPXV_CatP ot07_1_20 07	CPXV_Hu mMag07_ 1_2007	CPXV_Ger 2010_Alpa ca_2010	CPXV_Ger 2010_Raco on_2010	CPXV_Ger 1971_EP1_ 1971
CPXV_Ger2014_Ca12_2014 CPXV_Ger2012_Alpaca_2012 CPXV_Ger2015_Human2_2015 CPXV_Ger2015_Ca12_2015 CPXV_Ger2017_Alpaca2_2017 CPXV_Ger2017_Vole_2017 CPXV_Ger2017_Vole_2017 CPXV_Japkres8_1_2008 CPXV_Japkres8_2_2008	CPXV_Ger 2014_Cat2 _2014 0.010 0.013 0.013 0.010 0.012 0.018 0.018	CPXV_Ger 2012_Alpa ca_2012 0.004 0.008 0.005 0.006 0.013 0.013 0.013	CPXV_Ger 2015_Hum an2_2015 0.011 0.008 0.009 0.015 0.015 0.015	CPXV_Ger 2015_Cat2 _2015 	CPXV_Ger 2017_Alpa ca2_2017 0.004 0.001 0.0011 0.011	CPXV_Ger 2017_Vole _2017	CPXV_Hu mLan08_1 _2008	CPXV_JagK re08_1_20 08	CPXV_JagK re08_2_20 08	CPXV_Mo nKre08_4_ 2008	CPXV_EleG ri07_1_200 7	CPXV_Ger 2014_Cat1 _2014	CPXV_Ama _2015	CPXV_Bea Ber04_1_2 004	CPXV_Ger 1980_EP4_ 1980	CPXV_Ger 2010_Rat_ 2010	CPXV_Ger 2002_MKY _2002	CPXV_Ger 2013_Alpa ca_2013	CPXV_Hu mBer07_1 _2007	CPXV_CatP ot07_1_20 07	CPXV_Hu mMag07_ 1_2007	CPXV_Ger 2010_Alpa ca_2010	CPXV_Ger 2010_Raco on_2010	CPXV_Ger 1971_EP1_ 1971
CPXV_Ger2014_Cat2_2014           CPXV_Ger2012_Alpaca_2012           CPXV_Ger2015_Human2_2015           CPXV_Ger2015_Cat2_2015           CPXV_Ger2017_Alpaca_2017           CPXV_Ger2017_Vole_2017           CPXV_HumLan08_1_2008           CPXV_JagKre08_2_2008           CPXV_MonKre08_4_2008	CPXV_Ger 2014_Cat2 _2014 0.010 0.013 0.013 0.013 0.010 0.012 0.018 0.018 0.018	CPXV_Ger 2012_Alpa ca_2012 0.004 0.008 0.005 0.006 0.013 0.013 0.013 0.013	CPXV_Ger 2015_Hum an2_2015 0.011 0.008 0.009 0.015 0.015 0.015	CPXV_Ger 2015_Cat2 _2015 	CPXV_Ger 2017_Alpa ca2_2017 0.004 0.001 0.011 0.011 0.011	CPXV_Ger 2017_Vole _2017 	CPXV_Hu mLan08_1 _2008	CPXV_JagK re08_1_20 08	CPXV_JagK re08_2_20 08	CPXV_Mo nKre08_4_ 2008	CPXV_EleG ri07_1_200 7	CPXV_Ger 2014_Cat1 _2014	CPXV_Ama _2015	CPXV_Bea Ber04_1_2 004	CPXV_Ger 1980_EP4_ 1980	CPXV_Ger 2010_Rat_ 2010	CPXV_Ger 2002_MKY _2002	CPXV_Ger 2013_Alpa ca_2013	CPXV_Hu mBer07_1 _2007	CPXV_CatP ot07_1_20 07	CPXV_Hu mMag07_ 1_2007	CPXV_Ger 2010_Alpa ca_2010	CPXV_Ger 2010_Raco on_2010	CPXV_Ger 1971_EP1_ 1971
CPXV_Ger2014_Cat2_2014           CPXV_Ger2012_Alpaca_2012           CPXV_Ger2015_Human2_2015           CPXV_Ger2017_Cat2_2015           CPXV_Ger2017_Vole_2017           CPXV_Ger2017_Vole_2017           CPXV_HumAn08_1_2008           CPXV_JagKre08_1_2008           CPXV_Mone08_4_2008           CPXV_EleGri07_1_2007	CPXV_Ger 2014_Cat2 _2014 0.010 0.013 0.013 0.013 0.013 0.018 0.018 0.018 0.018	CPXV_Ger 2012_Alpa ca_2012 0.004 0.008 0.005 0.006 0.013 0.013 0.013 0.013 0.013	CPXV_Ger 2015_Hum an2_2015 	CPXV_Ger 2015_Cat2 _2015 	CPXV_Ger 2017_Alpa ca2_2017 	CPXV_Ger 2017_Vole _2017 	CPXV_Hu mLan08_1 _2008	CPXV_JagK re08_1_20 08	CPXV_lagK re08_2_20 08	CPXV_Mo nKre08_4_ 2008	CPXV_EleG ri07_1_200 7	CPXV_Ger 2014_Cat1 2014	CPXV_Ama _2015	CPXV_Bea Ber04_1_2 004	CPXV_Ger 1980_EP4_ 1980	CPXV_Ger 2010_Rat_ 2010	CPXV_Ger 2002_MKY _2002	CPXV_Ger 2013_Alpa ca_2013	CPXV_Hu mBer07_1 _2007	CPXV_CatP ot07_1_20 07	CPXV_Hu mMag07_ 1_2007	CPXV_Ger 2010_Alpa ca_2010	CPXV_Ger 2010_Raco on_2010	CPXV_Ger 1971_EP1_ 1971
CPXV_Ger2014_Cat2_2014 CPXV_Ger2012_Alpaca_2012 CPXV_Ger2015_Human2_2015 CPXV_Ger2015_Cat2_2015 CPXV_Ger2017_Vole_2017 CPXV_Ger2017_Vole_2017 CPXV_JagKre08_1_2008 CPXV_JagKre08_2_2008 CPXV_JAGKRE08_2007 CPXV_JAGKRE08_2007 CPXV_JAG	CPXV_Ger 2014_Cat2 _2014 0.010 0.013 0.013 0.010 0.012 0.018 0.018 0.018 0.018 0.015 0.018	CPXV_Ger 2012_Alpa ca_2012 0.004 0.008 0.005 0.006 0.013 0.013 0.013 0.013 0.010 0.013	CPXV_Ger 2015_Hum an2_2015 0.011 0.008 0.009 0.015 0.015 0.015 0.015 0.015 0.015	CPXV_Ger 2015_Cat2 _2015 	CPXV_Ger 2017_Alpa ca2_2017 	CPXV_Ger 2017_Vole _2017 	CPXV_Hu mLan08_1 _2008	CPXV_lagK re08_1_20 08	CPXV_lagK re08_2_20 08	CPXV_Mo nKre08_4_ 2008	CPXV_EleG ri07_1_200 7	CPXV_Ger 2014_Cat1 _2014	CPXV_Ama _2015	CPXV_Bea Ber04_1_2 004	CPXV_Ger 1980_EP4_ 1980	CPXV_Ger 2010_Rat_ 2010	CPXV_Ger 2002_MKY _2002	CPXV_Ger 2013_Alpa ca_2013	CPXV_Hu mBer07_1 _2007	CPXV_CatP ot07_1_20 07	CPXV_Hu mMag07_ 1_2007	CPXV_Ger 2010_Alpa ca_2010	CPXV_Ger 2010_Raco on_2010	CPXV_Ger 1971_EP1_ 1971
CPXV_Ger2014_Cat2_2014           CPXV_Ger2015_Alpaca_2012           CPXV_Ger2015_Human2_2015           CPXV_Ger2015_Cat2_2015           CPXV_Ger2017_Vole_2017           CPXV_Ger2017_Vole_2017           CPXV_Jagkre08_1_2008           CPXV_Jagkre08_2_2008           CPXV_Monkre08_4_2008           CPXV_Ger2014_Cat1_2014           CPXV_Ger2015	CPXV_Ger 2014_Cat2 _2014 0.010 0.013 0.013 0.013 0.010 0.012 0.018 0.018 0.018 0.018 0.018 0.015 0.015	CPXV_Ger 2012_Alpa ca_2012 0.004 0.008 0.005 0.006 0.013 0.013 0.013 0.013 0.010 0.013	CPXV_Ger 2015_Hum an2_2015 0.011 0.001 0.005 0.015 0.015 0.015 0.015 0.015 0.015 0.015	CPXV_Ger 2015_Cat2 _2015 	CPXV_Ger 2017_Alpa ca2_2017 	CPXV_Ger 2017_Vole _2017 	CPXV_Hu mLan08_1 _2008 	CPXV_lagK re08_1_20 08 08 0.000 0.000 0.010 0.011 0.012	CPXV_lagK re08_2_20 08	CPXV_Mo nKre08_4_ 2008	CPXV_EleG ri07_1_200 7	CPXV_Ger 2014_Cat1 _2014	CPXV_Ama _2015	CPXV_Bea Ber04_1_2 004	CPXV_Ger 1980_EP4_ 1980	CPXV_Ger 2010_Rat_ 2010	CPXV_Ger 2002_MKY _2002	CPXV_Ger 2013_Alpap ca_2013	CPXV_Hu mBer07_1 _2007	CPXV_CatP ot07_1_20 07	CPXV_Hu mMag07_ 1_2007	CPXV_Ger 2010_Alpa ca_2010	CPXV_Ger 2010_Raco on_2010	CPXV_Ger 1971_EP1_ 1971
CPXV_Ger2014_Cat2_2014           CPXV_Ger2012_Alpaca_2012           CPXV_Ger2015_Human2_2015           CPXV_Ger2017_Cat2_2015           CPXV_Ger2017_Vole_2017           CPXV_Ger2017_Vole_2017           CPXV_Hagkre08_1_2008           CPXV_Jagkre08_2_2008           CPXV_Ber2017_1_2007           CPXV_Ger2017_1_2007           CPXV_Ger2014_Cat1_2014           CPXV_Ber2015_CPXV_SeaBer04_1_2004	CPXV_Ger 2014_Cat2 _2014 0.010 0.013 0.010 0.013 0.010 0.012 0.018 0.018 0.018 0.018 0.015 0.018 0.015 0.017	CPXV_Ger 2012_Alpa ca_2012 0.004 0.008 0.005 0.006 0.013 0.013 0.013 0.013 0.013 0.010 0.010 0.010	CPXV_Ger 2015_Hum an2_2015 	CPXV_Ger 2015_Cat2 _2015 	CPXV_Ger 2017_Alpa ca2_2017 	CPXV_Ger 2017_Vole _2017 	CPXV_Hu mLan08_1 _2008 	CPXV_lagK re08_1_20 08 08 0.000 0.000 0.010 0.011 0.012 0.011	CPXV_lagK re08_2_20 08 08 0.000 0.010 0.010 0.012 0.012 0.014	CPXV_Mo nKre08_4_ 2008	CPXV_EleG ri07_1_200 7	CPXV_Ger 2014_Cat1 _2014	CPXV_Ama _2015	CPXV_Bea Ber04_1_2 004	CPXV_Ger 1980_EP4_ 1980	CPXV_Ger 2010_Rat_ 2010	CPXV_Ger 2002_MKY _2002	CPXV_Ger 2013_Alpa ca_2013	CPXV_Hu mBer07_1 _2007	CPXV_CatP ot07_1_20 07	CPXV_Hu mMag07_ 1_2007	CPXV_Ger 2010_Alpa ca_2010	CPXV_Ger 2010_Raco on_2010	CPXV_Ger 1971_EP1_ 1971
CPXV_Ger2014_Cat2_2014           CPXV_Ger2015_Alpaca_2012           CPXV_Ger2015_Human2_2015           CPXV_Ger2017_Cat2_2017           CPXV_Ger2017_Vole_2017           CPXV_Ger2017_Vole_2017           CPXV_JagKre08_1_2008           CPXV_JagKre08_2_2008           CPXV_Ger2017_1_2007           CPXV_Ger2014_Cat1_2014           CPXV_Ger2014_Cat1_2014           CPXV_Ger2014_Cat1_2014           CPXV_Ger2014_1_800	CPXV_Ger 2014_Cat2 _2014 0.010 0.013 0.013 0.010 0.012 0.018 0.018 0.018 0.018 0.015 0.015 0.017 0.017 0.017	CPXV_Ger 2012_Alpa ca_2012 0.004 0.005 0.006 0.013 0.013 0.013 0.013 0.013 0.010 0.013 0.010 0.012 0.027	CPXV_Ger 2015_Hum an2_2015 0.011 0.008 0.009 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.013 0.015	CPXV_Ger 2015_Cat2 _2015 0.004 0.004 0.004 0.014 0.014 0.014 0.014 0.010 0.014 0.011 0.013 0.013 0.028	CPXV_Ger 2017_Alpa ca2_2017 0.004 0.011 0.011 0.011 0.011 0.001 0.001 0.001 0.003 0.011 0.008	CPXV_Ger 2017_Vole _2017 	CPXV_Hu mLan08_1 _2008 	CPXV_lagK re08_1_20 08 0.000 0.000 0.010 0.011 0.013 0.012 0.014 0.029	CPXV_JagK re08_2_20 08 08 0.000 0.010 0.013 0.012 0.014 0.029	CPXV_Mo nKre08_4_ 2008 0.010 0.010 0.011 0.012 0.012 0.012	CPXV_EleG ri07_1_200 7 	CPXV_Ger 2014_Cat1 _2014	CPXV_Ama _2015	CPXV_Bea Ber04_1_2 004	CPXV_Ger 1980_EP4_ 1980	CPXV_Ger 2010_Rat_ 2010	CPXV_Ger 2002_MKY _2002 	CPXV_Ger 2013_Alpa ca_2013	CPXV_Hu mBer07_1 _2007	CPXV_CatP ot07_1_20 07	CPXV_Hu mMag07_ 1_2007	CPXV_Ger 2010_Alpa ca_2010	CPXV_Ger 2010_Raco on_2010	CPXV_Ger 1971_EP1_ 1971
CPXV_Ger2014_Ca12_2014           CPXV_Ger2015_Alpaca_2012           CPXV_Ger2015_Human2_2015           CPXV_Ger2015_Ca12_2015           CPXV_Ger2017_Alpaca2_2017           CPXV_Ger2017_Vole_2017           CPXV_Ger2017_Vole_2017           CPXV_Ger2017_Vole_2017           CPXV_JagKre08_1_2008           CPXV_JagKre08_2_2008           CPXV_JagKre08_2_2008           CPXV_EGF014_Ca11_2014           CPXV_Ger2014_Ca11_2014           CPXV_Bageser2014_Ca12_2014           CPXV_Ger2014_Ga1_2004           CPXV_Ger2010_Ra1_2010           CPXV_Ger2010_Ra1_2010	CPXV_Ger 2014_Cat2 _2014 0.010 0.013 0.013 0.013 0.013 0.012 0.018 0.018 0.018 0.018 0.018 0.015 0.015 0.015 0.017 0.032 0.029	CPXV_Ger 2012_Alpa ca_2012 0.004 0.005 0.005 0.003 0.013 0.013 0.013 0.013 0.010 0.013 0.010 0.012 0.022	CPXV_Ger 2015_Hum an2_2015 0.011 0.008 0.005 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.013 0.015 0.013 0.015 0.030 0.030	CPXV_Ger 2015_Cat2 _2015 	CPXV_Ger 2017_Alpa ca2_2017 0.004 0.011 0.011 0.011 0.001 0.008 0.011 0.008 0.011 0.008 0.011 0.008	CPXV_Ger 2017_Vole _2017 	CPXV_Hu mLan08_1 _2008 	CPXV_JagK re08_1_20 08 0.000 0.000 0.010 0.011 0.012 0.014 0.026 0.026	CPXV_lagK re08_2_20 08 08 0.000 0.010 0.010 0.013 0.012 0.012 0.012 0.029 0.025	CPXV_Mo nKre08_4_ 2008 0.010 0.010 0.013 0.012 0.012 0.012 0.029 0.029	CPXV_EleG ri07_1_200 7 	CPXV_Ger 2014_Cat1 _2014	CPXV_Ama _2015	CPXV_Bea Ber04_1_2 004	CPXV_Ger 1980_EP4_ 1980 	CPXV_Ger 2010_Rat_ 2010	CPXV_Ger 2002_MKY _2002	CPXV_Ger 2013_Alpa ca_2013	CPXV_Hu mBer07_1 _2007	CPXV_CatP ot07_1_20 07	CPXV_Hu mMag07_ 1_2007	CPXV_Ger 2010_Alpa ca_2010	CPXV_Ger 2010_Raco on_2010	CPXV_Ger 1971_EP1_ 1971
CPXV_Ger2014_Cat2_2014           CPXV_Ger2012_Alpaca_2012           CPXV_Ger2015_Human2_2015           CPXV_Ger2017_Alpaca2_2017           CPXV_Ger2017_Vole_2017           CPXV_JagKre08_1_2008           CPXV_JagKre08_1_2008           CPXV_Ber2017_Lolpaca2_2017           CPXV_JagKre08_1_2008           CPXV_JagKre08_1_2008           CPXV_Ber2014_Cat1_2014           CPXV_BeaBer04_1_2014           CPXV_BeaBer04_1_2004           CPXV_Ger2010_Rat_2010           CPXV_Ger2010_Rat_2010           CPXV_Ger2010_Albarea_2013	CPXV_Ger 2014_Cat2 _2014 	CPXV_Ger 2012_Alpa ca_2012 0.004 0.008 0.005 0.006 0.013 0.013 0.013 0.013 0.013 0.010 0.013 0.010 0.012 0.027 0.024	CPXV_Ger 2015_Hum an2_2015 0.011 0.008 0.009 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.013 0.013 0.013 0.013 0.015 0.013 0.001 0.001 0.001 0.002 0.0	CPXV_Ger 2015_Cat2 _2015 	CPXV_Ger 2017_Alpa ca2_2017 	CPXV_Ger 2017_Vole _2017 	CPXV_Hu mLan08_1 _2008	CPXV_lagK re08_1_20 08 0.000 0.000 0.010 0.011 0.012 0.012 0.014 0.025 0.025	CPXV_JagK re08_2_20 08 08 0.000 0.010 0.010 0.011 0.012 0.014 0.029 0.025 0.025	CPXV_Mo nKre08_4_ 2008 	CPXV_EleG ri07_1_200 7 	CPXV_Ger 2014_Cat1 2014 	CPXV_Ama _2015	CPXV_Bea Ber04_1_2 004	CPXV_Ger 1980_EP4_ 1980 	CPXV_Ger 2010_Rat_ 2010	CPXV_Ger 2002_MKY _2002	CPXV_Ger 2013_Alpa ca_2013	CPXV_Hu mBer07_1 _2007	CPXV_CatP ot07_1_20 07	CPXV_Hu mMag07_ 1_2007	CPXV_Ger 2010_Alpa ca_2010	CPXV_Ger 2010_Raco on_2010	CPXV_Ger 1971_EP1_ 1971
CPXV_Ger2014_Cat2_2014 CPXV_Ger2012_Alpaca_2012 CPXV_Ger2015_Human2_2015 CPXV_Ger2015_Cat2_2015 CPXV_Ger2017_Vole_2017 CPXV_Ger2017_Vole_2017 CPXV_HumLan08_1_2008 CPXV_JagKre08_1_2008 CPXV_JagKre08_4_2008 CPXV_Ger2014_Cat1_2014 CPXV_Ger2014_Cat1_2014 CPXV_Ger2014_Cat1_2014 CPXV_Ger2018_FA_1980 CPXV_Ger2010_Rat_2010 CPXV_Ger2010_Rat2_2010 CPXV_Ger2013_Alpaca_2013 CPXV_Ger2013_Alpaca_2013	CPXV_Ger 2014_cat2 014 0.010 0.013 0.010 0.013 0.010 0.012 0.018 0.018 0.018 0.015 0.015 0.017 0.032 0.029 0.028	CPXV_Ger 2012_Alpa ca_2012 0.004 0.005 0.006 0.013 0.013 0.013 0.013 0.013 0.010 0.013 0.010 0.012 0.027 0.024 0.023 0.023	CPXV_Ger 2015_Hum an2_2015 0.011 0.008 0.009 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.027 0.026 0.027	CPXV_Ger 2015_Cat2 _2015 	CPXV_Ger 2017_Alpa ca2_2017 0.004 0.011 0.011 0.011 0.011 0.008 0.011 0.008 0.011 0.008 0.011 0.002 0.022 0.021 0.021	CPXV_Ger 2017_Vole _2017 0.010 0.010 0.010 0.010 0.010 0.001 0.001 0.001 0.001 0.002 0.025 0.021 0.021	CPXV_Hu mLan08_1 _2008 	CPXV_JagK re08_1_20 08 08 0.000 0.000 0.010 0.011 0.012 0.012 0.025 0.025	CPXV_JagK re08,2_20 08 08 0.00 0.010 0.010 0.011 0.012 0.024 0.025 0.025 0.015	CPXV_Mo nKre08_4_ 2008 0.010 0.010 0.011 0.011 0.011 0.012 0.014 0.029 0.025 0.025 0.025	CPXV_EleG ri07_1_200 7 0.008 0.008 0.0008 0.000 0.002 0.0025 0.022 0.021	CPXV_Ger 2014_Cat1 2014	CPXV_Ama _2015	CPXVyBea Ber04_1_2 004	CPXV_Ger 1980_EP4_ 1980 	CPXV_Ger 2010_Rat_ 2010 	CPXV_Ger 2002_MKY _2002	CPXV_Ger 2013_Alpa ca_2013	CPXV_Hu mBer07_1 _2007	CPXV_CatP ot07_1_20 07	CPXV_Hu mMag07_ 1_2007	CPXV_Ger 2010_Alpa ca_2010	CPXV_Ger 2010_Raco on_2010	CPXV_Ger 1971_EP1_ 1971
CPXV_Ger2014_Cat2_2014           CPXV_Ger2012_Alpaca_2012           CPXV_Ger2015_Human2_2015           CPXV_Ger2015_Cat2_2017           CPXV_Ger2017_Alpaca2_2017           CPXV_Ger2017_Alpaca2_2017           CPXV_Ger2017_Alpaca2_2017           CPXV_Ger2017_Alpaca2_2017           CPXV_Ger2017_Alpaca2_2017           CPXV_Ger2017_Alpaca2_2017           CPXV_JagKre08_1_2008           CPXV_JagKre08_1_2008           CPXV_JagKre08_2_2008           CPXV_Ger2014_Cat1_2014           CPXV_Ger2016_CP4_1980           CPXV_Ger2010_Rat_2010           CPXV_Ger2010_Rat_2010           CPXV_Ger2010_Rat_2010           CPXV_Ger2013_Alpaca_2013           CPXV_Ger2015_1_2007           CPXV_Ger2016_Rat_2013           CPXV_Ger2016_Rat_2013           CPXV_Ger2016_Rat_2013           CPXV_Ger2016_Rat_2013           CPXV_GER2017_1_2007	CPXV_Ger 2014_Cat2 _2014 0.010 0.013 0.013 0.013 0.013 0.013 0.012 0.018 0.018 0.018 0.018 0.018 0.015 0.015 0.015 0.017 0.029 0.028 0.028 0.028	CPXV_Ger 2012_Alpa ca_2012 0.004 0.008 0.005 0.006 0.013 0.013 0.013 0.013 0.013 0.013 0.013 0.013 0.013 0.011 0.012 0.027 0.024 0.023 0.023 0.023	CPXV_Ger 2015_Hum an2_2015 0.011 0.008 0.009 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.013 0.013 0.013 0.027 0.026 0.026 0.026	CPXV_Ger 2015_Cat2 _2015 	CPXV_Ger 2017_Alpa ca2_2017 0.004 0.011 0.011 0.011 0.011 0.011 0.011 0.011 0.011 0.011 0.011 0.011 0.008 0.011 0.022 0.022 0.022 0.021 0.021	CPXV_Ger 2017_Vole _2017 	CPXV_Hu mLan08_1 _2008	CPXV_JagK re08_1_20 08 0.000 0.000 0.010 0.011 0.011 0.012 0.025 0.025 0.025 0.013	CPXV_JagK re08_2_20 08 08 0000 0.010 0.010 0.010 0.011 0.012 0.014 0.029 0.025 0.025 0.025 0.025 0.025	CPXV_Mo nKre08_4_ 2008 0.010 0.013 0.012 0.014 0.029 0.025 0.025 0.025 0.013	CPXV_EleG ri07_1_200 7 0.008 0.008 0.010 0.025 0.022 0.021 0.021 0.021	CPXV_Ger 2014_Cat1 2014 	CPXV_Ama _2015	CPXV_Bea Ber04_1_2 004	CPXV_Ger 1980_EP4_ 1980 	CPXV_Ger 2010_Rat_ 2010 	CPXV_Ger 2002_MKY _2002	CPXV_Ger 2013_Alpa ca_2013	CPXV_Hu mBer07_1 _2007	CPXV_CatP ot07_1_20 07	CPXV_Hu mMag07_ 1_2007	CPXV_Ger 2010_Alpa ca_2010	CPXV_Ger 2010_Raco on_2010	CPXV_Ger 1971_EP1_ 1971
CPXV_Ger2014_Cat2_2014           CPXV_Ger2012_Alpaca_2012           CPXV_Ger2015_Human2_2015           CPXV_Ger2017_Alpaca2_2017           CPXV_Ger2017_Alpaca2_2017           CPXV_Ger2017_Vole_2017           CPXV_JagKre08_1_2008           CPXV_JagKre08_1_2008           CPXV_JagKre08_2_2008           CPXV_Ber2014_Cat1_2014           CPXV_BeaBer04_1_2004           CPXV_BeaBer04_1_2004           CPXV_Ger2010_Rat_2010           CPXV_Ger2013_Alpaca_2013           CPXV_Ger2013_Alpaca_2013           CPXV_Ger2013_Alpaca_2013           CPXV_Ger2013_Alpaca_2013           CPXV_LatPort_1_2007           CPXV_LatPort_1_2007           CPXV_LatPort_1_2007	CPXV_Ger 2014_Cat2 _2014 0.013 0.013 0.013 0.010 0.012 0.018 0.018 0.018 0.018 0.018 0.018 0.015 0.018 0.015 0.015 0.017 0.032 0.029 0.028 0.028 0.016 0.016	CPXV_Ger 2012_Alpa ca_2012 0.004 0.008 0.005 0.006 0.013 0.013 0.013 0.013 0.013 0.013 0.013 0.013 0.013 0.011 0.024 0.022 0.021 0.023 0.001 0.011	CPXV_Ger 2015_Hum an2_2015 0.011 0.008 0.009 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.013 0.015 0.013 0.027 0.026 0.026 0.024 0.024 0.024 0.024	CPXV_Ger 2015_Cat2 _2015 0.004 0.007 0.014 0.014 0.014 0.014 0.014 0.014 0.014 0.014 0.014 0.014 0.014 0.012 0.025 0.022 0.024 0.024 0.012	CPXV_Ger 2017_Alpa ca2_2017 0.004 0.011 0.011 0.011 0.011 0.011 0.011 0.001 0.001 0.005 0.022 0.022 0.021 0.009 0.009	CPXV_Ger 2017_Vole _2017 	CPXV_Hu mLan08_1 _2008 	CPXV_JagK re08_1_20 08 0.000 0.000 0.010 0.010 0.013 0.012 0.025 0.025 0.025 0.013 0.013	CPXV_JagK re08_2_20 08 08 000 0.010 0.010 0.011 0.012 0.014 0.029 0.025 0.025 0.025 0.025 0.013 0.013	CPXU_Mo nKre08_4_ 2008 0.010 0.010 0.012 0.012 0.014 0.026 0.025 0.025 0.025 0.013 0.013 0.013	CPXV_EleG ri07_1_200 7 	CPXV_Ger 2014_Cat1 _2014 	CPXV_Ama _2015	CPXVyBea Ber04_1_2 004	CPXU_Ger 1980_EP4_ 1980 	CPXV_Ger 2010_Rat_ 2010 	CPXV_Ger 2002_MKY _2002	CPXV_Ger 2013_Alpa ca_2013	CPXV_Hu mBer07_1 _2007	CPXV_CatP ot07_1_20 07	CPXV_Hu mMag07_ 1_2007	CPXV_Ger 2010_Alpa ca_2010	CPXV_Ger 2010_Raco on_2010	CPXV_Ger 1971_EP1_ 1971
CPXV_Ger2014_Cat2_2014 CPXV_Ger2015_Alpaca_2012 CPXV_Ger2015_Human2_2015 CPXV_Ger2015_Cat2_2015 CPXV_Ger2017_Vole_2017 CPXV_Ger2017_Vole_2017 CPXV_HagKre08_1_2008 CPXV_JagKre08_1_2008 CPXV_JagKre08_4_2008 CPXV_Ger2014_Cat1_2014 CPXV_Ger2014_Cat1_2014 CPXV_Ger2014_Cat1_2014 CPXV_Ger2018_CA_2008 CPXV_Ger2018_CA_2010 CPXV_Ger2018_CA_2010 CPXV_Ger2013_Alpaca_2013 CPXV_HumBer07_1_2007 CPXV_Ger2013_Alpaca_2010 CPXV_Ger	CPXV_Ger 2014_cat2 014 0.010 0.013 0.010 0.013 0.010 0.012 0.018 0.018 0.018 0.015 0.018 0.015 0.015 0.017 0.029 0.028 0.028 0.016 0.016 0.016	CPXV_Ger 2012_Alpa ca_2012 0.004 0.008 0.005 0.006 0.013 0.013 0.013 0.013 0.013 0.013 0.013 0.010 0.012 0.027 0.024 0.023 0.023 0.011 0.011 0.011	CPXV_Ger 2015_Hum an2_2015 	CPXV_Ger 2015_Cat2 _2015 	CPXV_Ger 2017_Alpa ca2_2017 0.004 0.011 0.011 0.011 0.011 0.008 0.011 0.008 0.011 0.008 0.011 0.025 0.022 0.021 0.021 0.009 0.009 0.009	CPXV_Ger 2017_Vole _2017 0.010 0.010 0.010 0.010 0.010 0.010 0.001 0.001 0.002 0.001 0.025 0.021 0.021 0.021 0.020 0.009 0.009 0.009	CPXV_Hu mLan08_1 	CPXV_JagK re08_1_20 08 08 0.000 0.000 0.010 0.011 0.012 0.025 0.025 0.013 0.013 0.013 0.013	CPXV_JagK re08_2_20 08 08 08 0.00 0.010 0.010 0.013 0.012 0.025 0.025 0.013 0.013 0.013 0.013	CPXV_Mo nKre08_4_ 2008 0.010 0.013 0.012 0.014 0.025 0.025 0.013 0.013 0.013 0.013	CPXV_EleG ri07_1_200 7 0.008 0.008 0.000 0.001 0.025 0.022 0.021 0.021 0.001 0.009 0.000 0.000 0.000	CPXV_Ger 2014_Cat1 2014 	CPXV_Ama _2015	CPXVyBea Ber04_1_2 004	CPXV_Ger 1980_EP4_ 1980 	CPXV_Ger 2010_Rat_ 2010 	CPXV_Ger 2002_MKY _2002	CPXV_Ger 2013_Alpa ca_2013	CPXV_Hu mBer07_1 _2007	CPXV_CatP ot07_1_20 07	CPXV_Hu mMag07_ 1_2007	CPXV_Ger 2010_Alpa ca_2010	CPXV_Ger 2010_Raco on_2010	CPXV_Ger 1971_EP1_ 1971
CPXV_Ger2014_Cat2_2014 CPXV_Ger2012_Alpaca_2012 CPXV_Ger2015_Human2_2015 CPXV_Ger2015_Lat2_2015 CPXV_Ger2017_Vole_2017 CPXV_Ger2017_Vole_2017 CPXV_JagKre08_1_2008 CPXV_JagKre08_1_2008 CPXV_JagKre08_2_2008 CPXV_JagKre08_2_2008 CPXV_Ger2014_Cat1_2014 CPXV_Ger2014_Cat1_2014 CPXV_Ger2014_Cat1_2014 CPXV_Ger2016_R4_2004 CPXV_Ger2016_R4_2004 CPXV_Ger2016_R4_2004 CPXV_Ger2016_R4_2004 CPXV_Ger2016_R4_2002 CPXV_Ger2013_Alpaca_2013 CPXV_Ger2017_1_2007 CPXV_Ger2010_R1_2007 CPXV_Ger2010_R2_2007 CPXV_Ger2010_R207 CPXV_Ger2010_R207 CPXV_Ger2010_R207 CPXV_Ger2010_R207 CPXV_Ger2010_R207 CPXV_Ger2010_R207 CPXV_Ger2010_R207 CPXV_Ger2010_R207 CPXV_Ger2010_R207 CPXV_Ger2010_R207 CPXV_Ger2010_R207 CPXV_Ger2010_R207 CPXV_Ger2010_R207 CPXV_Ger20	CPXV_Ger 2014_Cat2 _2014 0.010 0.013 0.010 0.013 0.010 0.012 0.018 0.018 0.018 0.018 0.015 0.018 0.015 0.017 0.029 0.028 0.029 0.028 0.029 0.028 0.016 0.016 0.016 0.016 0.016 0.016 0.016 0.016 0.020	CPXV_Ger 2012_Alpa ca_2012 0.004 0.008 0.005 0.006 0.013 0.013 0.013 0.013 0.013 0.013 0.013 0.013 0.013 0.013 0.013 0.013 0.013 0.013 0.013 0.013 0.011 0.022 0.022 0.024 0.023 0.023 0.011 0.011 0.011 0.015 0.015	CPXV_Ger 2015_Hum an2_2015 	CPXV_Ger 2015_Cat2 _2015 	CPXV_Ger 2017_Alpa ca2_2017 0.004 0.011 0.011 0.011 0.011 0.011 0.011 0.011 0.011 0.011 0.011 0.025 0.025 0.022 0.021 0.021 0.009 0.009 0.009 0.0013 0.013	CPXV_Ger 2017_Vole _2017 	CPXV_Hu mLan08_1 	CPXV_JagK re08_1_20 08 08 0000 0.000 0.010 0.013 0.013 0.012 0.025 0.025 0.025 0.025 0.013 0.013 0.013 0.013 0.013	CPXV_JagK re08_2_20 08 08 0.000 0.010 0.010 0.011 0.012 0.014 0.025 0.025 0.025 0.025 0.013 0.013 0.013 0.0116 0.014	CPXV_Mo nKre08_4_ 2008 0.010 0.013 0.014 0.012 0.014 0.025 0.025 0.025 0.013 0.013 0.013 0.013 0.013 0.016 0.016	CPXV_EleG ri07_1_200 7 0.008 0.008 0.008 0.000 0.001 0.025 0.022 0.021 0.021 0.021 0.021 0.010 0.009 0.010 0.0013 0.013	CPXV_Ger 2014_Cat1 2014 	CPXV_Ama _2015	CPXV_Bea Ber04_1_2 004	CPXV_Ger 1980_EP4_ 1980 	CPXV_Ger 2010_Rat_ 2010 	CPXV_Ger 2002_MKY _2002	CPXV_Ger 2013_Alpa ca_2013	CPXV_Hu mBer07_1 _2007	CPXV_CatP ot07_1_20 07	CPXV_Hu mMag07_ 1_2007	CPXV_Ger 2010_Alpa ca_2010	CPXV_Ger 2010_Raco on_2010	CPXV_Ger 1971_EP1_ 1971

									ML	tree of 87 O	PXV whole g	enomes												
	CPXV_Ger 1971_EP1	CPXV_JagK re08_2	CPXV_Mo nKre08_4	CPXV_JagK re08_1	CPXV_Hu mLan08_1	CPXV_Ger 2017_Vole	CPXV_Ger 2015_Cat2	CPXV_Ger 2017_Alpa ca2	CPXV_Ger 2010_Alpa ca	CPXV_Ger 2010_Raco on	CPXV_Ger 2014_Cat2	CPXV_Ger 2015_Hum an2	CPXV_Ger 2012_Alpa ca	CPXV_Ger 2014_Cat1	CPXV_Ger 2013_Alpa ca	CPXV_Ger 1980_EP4	CPXV_Ger 2010_Rat	CPXV_Ger 2002_MKY	CPXV_Hu mMag07_ 1	CPXV_Hu mBer07_1	CPXV_CatP ot07_1	CPXV_Bea Ber04_1	CPXV_Ama _2015	CPXV_EleG ri07_1
CPXV Ger1971 EP1																								
CPXV JagKre08 2	0.015																							
CPXV MonKre08 4	0.015	0.000																						
CPXV JagKre08 1	0.015	0.000	0.000																					
CPXV HumLan08 1	0.015	0.000	0.000	0.000																				
CPXV Ger2017 Vole	0.016	0.012	0.012	0.012	0.012																			
CPXV Ger2015 Cat2	0.019	0.015	0.015	0.015	0.015	0.007																		
CPXV Ger2017 Alpaca2	0.017	0.013	0.013	0.013	0.013	0.006	0.005																	
CPXV_Ger2010_Alpaca	0.023	0.019	0.019	0.019	0.019	0.014	0.017	0.015																
CPXV_Ger2010_Racoon	0.023	0.020	0.020	0.020	0.020	0.014	0.017	0.015	0.015															
CPXV_Ger2014_Cat2	0.023	0.019	0.019	0.019	0.019	0.014	0.017	0.015	0.015	0.010														
CPXV_Ger2015_Human2	0.019	0.015	0.015	0.015	0.015	0.010	0.013	0.011	0.013	0.014	0.014													
CPXV_Ger2012_Alpaca	0.017	0.014	0.014	0.014	0.014	0.008	0.011	0.009	0.012	0.012	0.012	0.004												
CPXV_Ger2014_Cat1	0.018	0.014	0.014	0.014	0.014	0.011	0.014	0.012	0.018	0.018	0.018	0.014	0.012											
CPXV_Ger2013_Alpaca	0.020	0.016	0.016	0.016	0.016	0.013	0.016	0.014	0.020	0.020	0.020	0.016	0.014	0.012										
CPXV_Ger1980_EP4	0.029	0.026	0.026	0.026	0.026	0.022	0.025	0.023	0.029	0.030	0.029	0.025	0.023	0.021	0.012									
CPXV Ger2010 Rat	0.027	0.024	0.024	0.024	0.024	0.020	0.023	0.021	0.027	0.027	0.027	0.023	0.021	0.019	0.009	0.006								
CPXV_Ger2002_MKY	0.024	0.020	0.020	0.020	0.020	0.016	0.019	0.017	0.023	0.024	0.023	0.019	0.018	0.015	0.006	0.009	0.007							
CPXV_HumMag07_1	0.018	0.014	0.014	0.014	0.014	0.010	0.013	0.011	0.017	0.018	0.017	0.013	0.012	0.009	0.008	0.017	0.015	0.011						
CPXV_HumBer07_1	0.018	0.015	0.015	0.015	0.015	0.011	0.014	0.012	0.018	0.019	0.018	0.014	0.013	0.010	0.008	0.018	0.016	0.012	0.002					
CPXV_CatPot07_1	0.018	0.014	0.014	0.014	0.014	0.011	0.013	0.012	0.018	0.018	0.018	0.014	0.012	0.010	0.008	0.017	0.015	0.011	0.001	0.002				
CPXV_BeaBer04_1	0.018	0.015	0.015	0.015	0.015	0.011	0.014	0.012	0.018	0.019	0.018	0.014	0.012	0.010	0.008	0.018	0.016	0.012	0.002	0.002	0.001			
CPXV_Ama_2015	0.021	0.017	0.017	0.017	0.017	0.014	0.016	0.015	0.021	0.021	0.021	0.017	0.015	0.012	0.011	0.020	0.018	0.014	0.006	0.007	0.006	0.007		
CPXV_EleGri07_1	0.015	0.011	0.011	0.011	0.011	0.009	0.012	0.010	0.016	0.017	0.016	0.012	0.011	0.012	0.014	0.023	0.021	0.017	0.011	0.012	0.011	0.012	0.014	
							•		BIt	ree of 87 OF	XV whole ge	enomes	•											
	CPXV_Mo nKre08_4	CPXV_JagK re08_2	CPXV_JagK re08_1	CPXV_Hu mLan08_1	CPXV_Ger 2017_Vole	CPXV_Ger 2017_Alpa ca2	CPXV_Ger 2015_Cat2	CPXV_Ger 2015_Hum an2	BI t CPXV_Ger 2012_Alpa ca	CPXV_Ger 2014_Cat2	CPXV whole ge CPXV_Ger 2010_Raco on	CPXV_Ger 2010_Alpa	CPXV_Hu mMag07_ 1	CPXV_Hu mBer07_1	CPXV_Bea Ber04_1	CPXV_CatP ot07_1	CPXV_Ama _2015	CPXV_Ger 2013_Alpa ca	CPXV_Ger 2010_Rat	CPXV_Ger 1980_EP4	CPXV_Ger 2002_MKY	CPXV_Ger 2014_Cat1	CPXV_EleG ri07_1	CPXV_Ger 1971_EP1
	CPXV_Mo nKre08_4	CPXV_JagK re08_2	CPXV_JagK re08_1	CPXV_Hu mLan08_1	CPXV_Ger 2017_Vole	CPXV_Ger 2017_Alpa ca2	CPXV_Ger 2015_Cat2	CPXV_Ger 2015_Hum an2	BI t CPXV_Ger 2012_Alpa ca	ree of 87 OF CPXV_Ger 2014_Cat2	XV whole ge CPXV_Ger 2010_Raco on	CPXV_Ger 2010_Alpa ca	CPXV_Hu mMag07_ 1	CPXV_Hu mBer07_1	CPXV_Bea Ber04_1	CPXV_CatP ot07_1	CPXV_Ama _2015	CPXV_Ger 2013_Alpa ca	CPXV_Ger 2010_Rat	CPXV_Ger 1980_EP4	CPXV_Ger 2002_MKY	CPXV_Ger 2014_Cat1	CPXV_EleG ri07_1	CPXV_Ger 1971_EP1
CPXV_MonKre08_4	CPXV_Mo nKre08_4	CPXV_JagK re08_2	CPXV_JagK re08_1	CPXV_Hu mLan08_1	CPXV_Ger 2017_Vole	CPXV_Ger 2017_Alpa ca2	CPXV_Ger 2015_Cat2	CPXV_Ger 2015_Hum an2	Bi t CPXV_Ger 2012_Alpa ca	ree of 87 OF CPXV_Ger 2014_Cat2	XV whole ge CPXV_Ger 2010_Raco on	CPXV_Ger 2010_Alpa ca	CPXV_Hu mMag07_ 1	CPXV_Hu mBer07_1	CPXV_Bea Ber04_1	CPXV_CatP ot07_1	CPXV_Ama _2015	CPXV_Ger 2013_Alpa ca	CPXV_Ger 2010_Rat	CPXV_Ger 1980_EP4	CPXV_Ger 2002_MKY	CPXV_Ger 2014_Cat1	CPXV_EleG ri07_1	CPXV_Ger 1971_EP1
CPXV_MonKre08_4 CPXV_lagKre08_2	CPXV_Mo nKre08_4	CPXV_JagK re08_2	CPXV_JagK re08_1	CPXV_Hu mLan08_1	CPXV_Ger 2017_Vole	CPXV_Ger 2017_Alpa ca2	CPXV_Ger 2015_Cat2	CPXV_Ger 2015_Hum an2	BI t CPXV_Ger 2012_Alpa ca	ree of 87 OF CPXV_Ger 2014_Cat2	XV whole ge CPXV_Ger 2010_Raco on	CPXV_Ger 2010_Alpa ca	CPXV_Hu mMag07_ 1	CPXV_Hu mBer07_1	CPXV_Bea Ber04_1	CPXV_CatP ot07_1	CPXV_Ama _2015	CPXV_Ger 2013_Alpa ca	CPXV_Ger 2010_Rat	CPXV_Ger 1980_EP4	CPXV_Ger 2002_MKY	CPXV_Ger 2014_Cat1	CPXV_EleG ri07_1	CPXV_Ger 1971_EP1
CPXV_MonKre08_4 CPXV_JagKre08_2 CPXV_JagKre08_1	CPXV_Mo nKre08_4	CPXV_JagK re08_2	CPXV_JagK re08_1	CPXV_Hu mLan08_1	CPXV_Ger 2017_Vole	CPXV_Ger 2017_Alpa ca2	CPXV_Ger 2015_Cat2	CPXV_Ger 2015_Hum an2	Bi t CPXV_Ger 2012_Alpa ca	CPXV_Ger 2014_Cat2	XV whole ge CPXV_Ger 2010_Raco on	CPXV_Ger 2010_Alpa ca	CPXV_Hu mMag07_ 1	CPXV_Hu mBer07_1	CPXV_Bea Ber04_1	CPXV_CatP ot07_1	CPXV_Ama _2015	CPXV_Ger 2013_Alpa ca	CPXV_Ger 2010_Rat	CPXV_Ger 1980_EP4	CPXV_Ger 2002_MKY	CPXV_Ger 2014_Cat1	CPXV_EleG ri07_1	CPXV_Ger 1971_EP1
CPXV_MonKre08_4 CPXV_JagKre08_2 CPXV_JagKre08_1 CPXV_HumLan08_1	CPXV_Mo nKre08_4 0.00001 0.00001 0.00002	CPXV_JagK re08_2 0.00001 0.00002	CPXV_JagK re08_1	CPXV_Hu mLan08_1	CPXV_Ger 2017_Vole	CPXV_Ger 2017_Alpa ca2	CPXV_Ger 2015_Cat2	CPXV_Ger 2015_Hum an2	Bl t CPXV_Ger 2012_Alpa ca	CPXV_Ger 2014_Cat2	XV whole ge CPXV_Ger 2010_Raco on	CPXV_Ger 2010_Alpa ca	CPXV_Hu mMag07_ 1	CPXV_Hu mBer07_1	CPXV_Bea Ber04_1	CPXV_CatP ot07_1	CPXV_Ama _2015	CPXV_Ger 2013_Alpa ca	CPXV_Ger 2010_Rat	CPXV_Ger 1980_EP4	CPXV_Ger 2002_MKY	CPXV_Ger 2014_Cat1	CPXV_EleG ri07_1	CPXV_Ger 1971_EP1
CPXV_MonKre08_4 CPXV_jagKre08_2 CPXV_jagKre08_1 CPXV_HumLan08_1 CPXV_Ger2017_Vole CPXV_Ger2017_Vole	CPXV_Mo nKre08_4 0.00001 0.00001 0.00002 0.012	CPXV_JagK re08_2 0.00001 0.00002 0.012	CPXV_JagK re08_1	CPXV_Hu mLan08_1	CPXV_Ger 2017_Vole	CPXV_Ger 2017_Alpa ca2	CPXV_Ger 2015_Cat2	CPXV_Ger 2015_Hum an2	BI t CPXV_Ger 2012_Alpa ca	ree of 87 OF CPXV_Ger 2014_Cat2	XV whole ge CPXV_Ger 2010_Raco on	CPXV_Ger 2010_Alpa ca	CPXV_Hu mMag07_ 1	CPXV_Hu mBer07_1	CPXV_Bea Ber04_1	CPXV_CatP ot07_1	CPXV_Ama _2015	CPXV_Ger 2013_Alpa ca	CPXV_Ger 2010_Rat	CPXV_Ger 1980_EP4	CPXV_Ger 2002_MKY	CPXV_Ger 2014_Cat1	CPXV_EleG ri07_1	CPXV_Ger 1971_EP1
CPXV_MonKre08_4 CPXV_JagKre08_2 CPXV_JagKre08_1 CPXV_HumLan08_1 CPXV_Ger2017_Vole CPXV_Ger2017_Alpaca2 CPXV_Ger2017_Cola	CPXV_Mo nKre08_4 0.00001 0.00001 0.00002 0.012 0.013	CPXV_JagK re08_2 0.00001 0.00002 0.012 0.013 0.015	CPXV_JagK re08_1 0.00002 0.012 0.013	CPXV_Hu mLan08_1	CPXV_Ger 2017_Vole	CPXV_Ger 2017_Alpa ca2	CPXV_Ger 2015_Cat2	CPXV_Ger 2015_Hum an2	BI t CPXV_Ger 2012_Alpa ca	ree of 87 OF CPXV_Ger 2014_Cat2	XV whole ge CPXV_Ger 2010_Raco on	CPXV_Ger 2010_Alpa ca	CPXV_Hu mMag07_ 1	CPXV_Hu mBer07_1	CPXV_Bea Ber04_1	CPXV_CatP ot07_1	CPXV_Ama _2015	CPXV_Ger 2013_Alpa ca	CPXV_Ger 2010_Rat	CPXV_Ger 1980_EP4	CPXV_Ger 2002_MKY	CPXV_Ger 2014_Cat1	CPXV_EleG ri07_1	CPXV_Ger 1971_EP1
CPXV_MonKre08_4           CPXV_JagKre08_1           CPXV_JagKre08_1           CPXV_HumLan08_1           CPXV_Ger2017_Vole           CPXV_Ger2017_Alpaca2           CPXV_Ger2015_Ca12           CPXV_Ger2015_thursar2	CPXV_Mo nKre08_4 0.00001 0.00002 0.012 0.013 0.015	CPXV_JagK re08_2 0.00001 0.00002 0.012 0.013 0.015	CPXV_JagK re08_1 0.00002 0.012 0.013 0.015	CPXV_Hu mLan08_1 0.012 0.013 0.015	CPXV_Ger 2017_Vole	CPXV_Ger 2017_Alpa ca2	CPXV_Ger 2015_Cat2	CPXV_Ger 2015_Hum an2	Bl t CPXV_Ger 2012_Alpa ca	ree of 87 OF CPXV_Ger 2014_Cat2	XV whole ge CPXV_Ger 2010_Raco on	CPXV_Ger 2010_Alpa ca	CPXV_Hu mMag07_ 1	CPXV_Hu mBer07_1	CPXV_Bea Ber04_1	CPXV_CatP ot07_1	CPXV_Ama _2015	CPXV_Ger 2013_Alpa ca	CPXV_Ger 2010_Rat	CPXV_Ger 1980_EP4	CPXV_Ger 2002_MKY	CPXV_Ger 2014_Cat1	CPXV_EleG ri07_1	CPXV_Ger 1971_EP1
CPXV_MonKre08_4           CPXV_JagKre08_1           CPXV_HumLan08_1           CPXV_Ger2017_Vole           CPXV_Ger2017_Lapsca2           CPXV_Ger2015_Cat2           CPXV_Ger2015_Laman2           CPXV_Ger2015_Lapsca2	CPXV_Mo nKre08_4 0.00001 0.00001 0.00002 0.012 0.013 0.015 0.015	CPXV_lagK re08_2 0.00001 0.00002 0.012 0.013 0.015 0.015	CPXV_JagK re08_1 0.00002 0.012 0.013 0.015 0.015	CPXV_Hu mLan08_1 0.012 0.013 0.015 0.015	CPXV_Ger 2017_Vole	CPXV_Ger 2017_Alpa ca2 0.005 0.001	CPXV_Ger 2015_Cat2	CPXV_Ger 2015_Hum an2	Bit CPXV_Ger 2012_Alpa ca	ree of 87 Of CPXV_Ger 2014_Cat2	XV whole ge CPXV_Ger 2010_Raco on	CPXV_Ger 2010_Alpa ca	CPXV_Hu mMag07_ 1	CPXV_Hu mBer07_1	CPXV_Bea Ber04_1	CPXV_CatP ot07_1	CPXV_Ama _2015	CPXV_Ger 2013_Alpa ca	CPXV_Ger 2010_Rat	CPXV_Ger 1980_EP4	CPXV_Ger 2002_MKY	CPXV_Ger 2014_Cat1	CPXV_EleG ri07_1	CPXV_Ger 1971_EP1
CPXV_MonKre08_4           CPXV_JagKre08_2           CPXV_JagKre08_1           CPXV_Ger2017_Vole           CPXV_Ger2017_Alpaca2           CPXV_Ger2015_Luman2           CPXV_Ger2015_Luman2           CPXV_Ger2014_Alpaca           CPXV_Ger2014_Alpaca	CPXV_Mo nKre08_4 0.00001 0.00002 0.012 0.013 0.015 0.015 0.013	CPXV_lagK re08_2 0.00001 0.0002 0.012 0.013 0.015 0.015 0.013	CPXV_JagK re08_1 0.00002 0.012 0.013 0.015 0.015 0.013	CPXV_Hu mLan08_1 0.012 0.013 0.015 0.015 0.013	CPXV_Ger 2017_Vole 0.005 0.007 0.010 0.008	CPXV_Ger 2017_Alpa ca2 0.005 0.011 0.009	CPXV_Ger 2015_Cat2	CPXV_Ger 2015_Hum an2 0.004	Bit CPXV_Ger 2012_Alpa ca	ree of 87 01 CPXV_Ger 2014_Cat2	2XV whole get CPXV_Ger 2010_Raco on	CPXV_Ger 2010_Alpa ca	CPXV_Hu mMag07_ 1	CPXV_Hu mBer07_1	CPXV_Bea Ber04_1	CPXV_CatP ot07_1	CPXV_Ama _2015	CPXV_Ger 2013_Alpa ca	CPXV_Ger 2010_Rat	CPXV_Ger 1980_EP4	CPXV_Ger 2002_MKY	CPXV_Ger 2014_Cat1	CPXV_EleG ri07_1	CPXV_Ger 1971_EP1
CPXV_MonKre08_4           CPXV_JagKre08_2           CPXV_JagKre08_1           CPXV_HumLan08_1           CPXV_Ger2017_Vole           CPXV_Ger2017_Alpaca2           CPXV_Ger2015_Lat2           CPXV_Ger2015_Human2           CPXV_Ger2012_Alpaca           CPXV_Ger2010_D_Bracoan	CPXV_Mo nKre08_4 0.00001 0.00001 0.00002 0.012 0.013 0.015 0.015 0.013 0.019 0.019	CPXV_JagK re08_2 0.000001 0.0002 0.012 0.013 0.015 0.015 0.015 0.013 0.019 0.019	CPXV_JagK re08_1 0.00002 0.012 0.013 0.015 0.015 0.015 0.013 0.019 0.019	CPXV_Hu mLan08_1 0.012 0.013 0.015 0.015 0.013 0.019 0.019	CPXV_Ger 2017_Vole 0.005 0.007 0.010 0.008 0.014	CPXV_Ger 2017_Alpa ca2 0.005 0.011 0.009 0.015 0.015	CPXV_Ger 2015_Cat2 0.013 0.011 0.017 0.017	CPXV_Ger 2015_Hum an2 0.004 0.013	Bi t CPXV_Ger 2012_Alpa ca	ree of 87 OF	XV whole ge CPXV_Ger 2010_Raco on	CPXV_Ger 2010_Alpa ca	CPXV_Hu mMag07_ 1	CPXV_Hu mBer07_1	CPXV_Bea Ber04_1	CPXV_CatP ot07_1	CPXV_Ama _2015	CPXV_Ger 2013_Alpa ca	CPXV_Ger 2010_Rat	CPXV_Ger 1980_EP4	CPXV_Ger 2002_MKY	CPXV_Ger 2014_Cat1	CPXV_EleG ri07_1	CPXV_Ger 1971_EP1
CPXV_MonKre08_4           CPXV_JagKre08_1           CPXV_JagKre08_1           CPXV_HumLan08_1           CPXV_Ger2017_Vole           CPXV_Ger2015_Cat2           CPXV_Ger2015_Lat2           CPXV_Ger2012_Alpaca           CPXV_Ger2014_Cat2           CPXV_Ger2010_Raccon           CPXV_Ger2010_Raccon	CPXV_Mo nKre08_4 0.00001 0.00001 0.00002 0.012 0.013 0.015 0.015 0.013 0.019 0.019	CPXV_lagK re08_2 0.000001 0.00002 0.012 0.013 0.015 0.015 0.015 0.019 0.019	CPXV_JagK re08_1 0.00002 0.012 0.013 0.015 0.015 0.013 0.019 0.019	CPXV_Hu mLan08_1 0.012 0.013 0.015 0.013 0.015 0.013 0.019 0.019	CPXV_Ger 2017_Vole 0.005 0.007 0.010 0.008 0.014 0.014	CPXV_Ger 2017_Alpa ca2 0.005 0.011 0.009 0.015 0.015	CPXV_Ger 2015_Cat2 0.013 0.011 0.017 0.017	CPXV_Ger 2015_Hum an2 0.004 0.013 0.014	Bi t CPXV_Ger 2012_Alpa ca 	ree of 87 OF	2XV whole ge CPXV_Ger 2010_Raco on	CPXV_Ger 2010_Alpa ca	CPXV_Hu mMag07_ 1	CPXV_Hu mBer07_1	CPXV_Bea Ber04_1	CPXV_CatP ot07_1	CPXV_Ama _2015	CPXV_Ger 2013_Alpa ca	CPXV_Ger 2010_Rat	CPXV_Ger 1980_EP4	CPXV_Ger 2002_MKY	CPXV_Ger 2014_Cat1	CPXV_EleG ri07_1	CPXV_Ger 1971_EP1
CPXV_MonKre08_4           CPXV_JagKre08_1           CPXV_HumLan08_1           CPXV_Ger2017_Vole           CPXV_Ger2015_Cat2           CPXV_Ger2015_Lalpaca           CPXV_Ger2015_Lalpaca           CPXV_Ger2010_Rapca           CPXV_Ger2010_Rapca           CPXV_Ger2010_Rapca           CPXV_Ger2010_Alpaca           CPXV_Ger2010_Rapca           CPXV_Ger2010_Alpaca	CPXV_Mo nKre08_4 0.00001 0.00002 0.012 0.013 0.015 0.015 0.015 0.013 0.019 0.019 0.019	CPXV_JagK re08_2 0.000001 0.00002 0.012 0.013 0.015 0.013 0.019 0.019 0.019	CPXV_JagK re08_1 0.00002 0.012 0.013 0.015 0.013 0.015 0.013 0.019 0.019	CPXV_Hu mLan08_1 0.012 0.013 0.015 0.013 0.015 0.013 0.019 0.019 0.019	CPXV_Ger 2017_Vole 0.005 0.007 0.010 0.008 0.014 0.014 0.014	CPXV_Ger 2017_Alpa ca2 0.005 0.011 0.009 0.015 0.015 0.015	CPXV_Ger 2015_Cat2 0.013 0.013 0.011 0.017 0.017 0.016 0.015	CPXV_Ger 2015_Hum an2 0.004 0.013 0.014 0.013	Bi t CPXV_Ger 2012_Alpa ca 0.012 0.012 0.012 0.012	ree of 87 OF CPXV_Ger 2014_Cat2	2010_Raco on 0.015 0.015	CPXV_Ger 2010_Alpa ca	CPXV_Hu mMag07_ 1	CPXV_Hu mBer07_1	CPXV_Bea Ber04_1	CPXV_CatP ot07_1	CPXV_Ama _2015	CPXV_Ger 2013_Alpa ca	CPXV_Ger 2010_Rat	CPXV_Ger 1980_EP4	CPXV_Ger 2002_MKY	CPXV_Ger 2014_Cat1	CPXV_EleG ri07_1	CPXV_Ger 1971_EP1
CPXV_MonKre08_4           CPXV_JagKre08_2           CPXV_JagKre08_1           CPXV_HumLan08_1           CPXV_Ger2017_Vole           CPXV_Ger2017_Alpaca2           CPXV_Ger2015_Human2           CPXV_Ger2015_Human2           CPXV_Ger2016_Cat2           CPXV_Ger2016_Alpaca           CPXV_Ger2010_Alpaca           CPXV_Ger2010_Racoon           CPXV_Ger2010_Rapca           CPXV_HumMag07_1           CPXV_HumMag07_1	CPXV_Mo nKre08_4 0.00001 0.00002 0.012 0.013 0.015 0.015 0.015 0.019 0.019 0.019 0.019	CPXV_JagK re08_2 0.00001 0.00002 0.012 0.013 0.015 0.015 0.015 0.019 0.019 0.019 0.014 0.014	CPXV_JagK re08_1 0.00002 0.012 0.013 0.015 0.015 0.015 0.019 0.019 0.019 0.014 0.014	CPXV_Hu mLan08_1 0.012 0.013 0.015 0.015 0.015 0.019 0.019 0.019 0.019	CPXV_Ger 2017_Vole 0.005 0.007 0.010 0.008 0.014 0.014 0.014 0.014	CPXV_Ger 2017_Alpa ca2 0.005 0.011 0.005 0.015 0.015 0.015 0.015	CPXV_Ger 2015_Cat2 0.013 0.011 0.017 0.017 0.016 0.013 0.013	CPXV_Ger 2015_Hum an2 0.004 0.013 0.014 0.013 0.014	Bi t CPXV_Ger 2012_Alpa ca 0.012 0.012 0.012 0.012 0.012	ree of 87 OF CPXV_Ger 2014_Cat2	2XV whole ge CPXV_Ger 2010_Raco on 0.015 0.015 0.015	CPXV_Ger 2010_Alpa ca	CPXV_Hu mMag07_ 1	CPXV_Hu mBer07_1	CPXV_Bea Ber04_1	CPXV_CatP ot07_1	CPXV_Ama _2015	CPXV_Ger 2013_Alpa ca	CPXV_Ger 2010_Rat	CPXV_Ger 1980_EP4	CPXV_Ger 2002_MKY	CPXV_Ger 2014_Cat1	CPXV_EleG ri07_1	CPXV_Ger 1971_EP1
CPXV_MonKre08_4           CPXV_JagKre08_1           CPXV_JagKre08_1           CPXV_HumLan08_1           CPXV_Ger2017_Vole           CPXV_Ger2015_Cat2           CPXV_Ger2015_Luman2           CPXV_Ger2014_Lat2           CPXV_Ger2014_Cat2           CPXV_Ger2010_Raccon           CPXV_Ger2010_Racca           CPXV_Ger2010_Raccon           CPXV_HumMag07_1           CPXV_HumMer07_1	CPXV_Mo nKre08_4 0.00001 0.00001 0.00002 0.013 0.015 0.015 0.015 0.019 0.019 0.019 0.019 0.014 0.015	CPXV_lagK re08_2 0.00001 0.012 0.013 0.015 0.015 0.015 0.019 0.019 0.019 0.019 0.019	CPXV_JagK re08_1 0.00002 0.012 0.013 0.015 0.015 0.015 0.019 0.019 0.019 0.019	CPXV_Hu mLan08_1 0.012 0.013 0.015 0.015 0.015 0.019 0.019 0.019 0.019 0.019	CPXV_Ger 2017_Vole 0.005 0.007 0.010 0.014 0.014 0.014 0.014 0.010	CPXV_Ger 2017_Alpa ca2	CPXV_Ger 2015_Cat2 0.013 0.013 0.011 0.017 0.016 0.013 0.014	CPXV_Ger 2015_Hum an2 0.004 0.013 0.014 0.013 0.014 0.013	Bi t CPXV_Ger 2012_Alpa ca 0.012 0.012 0.012 0.012 0.012 0.012 0.012	ree of 87 OF	2XV whole ge CPXV_Ger 2010_Raco on 	CPXV_Ger 2010_Alpa ca	CPXV_Hu mMag07_ 1	CPXV_Hu mBer07_1	CPXV_Bea Ber04_1	CPXV_CatP ot07_1	CPXV_Ama _2015	CPXV_Ger 2013_Alpa ca	CPXV_Ger 2010_Rat	CPXV_Ger 1980_EP4	CPXV_Ger 2002_MKY	CPXV_Ger 2014_Cat1	CPXV_EleG ri07_1	CPXV_Ger 1971_EP1
CPXV_MonKre08_4           CPXV_JagKre08_1           CPXV_JagKre08_1           CPXV_HumLan08_1           CPXV_Ger2017_Vole           CPXV_Ger2015_Cat2           CPXV_Ger2015_Lat2           CPXV_Ger2012_Alpaca           CPXV_Ger2010_Racoon           CPXV_Ger2010_Racoa           CPXV_Ger2010_Racoa           CPXV_Ger2010_Raca           CPXV_HumMag07_1           CPXV_HumMe07_1           CPXV_Ger2012_1	CPXV_Mo nKre08_4 0.00001 0.00001 0.012 0.012 0.013 0.015 0.015 0.019 0.019 0.019 0.019 0.019 0.019 0.015	CPXV_lagK re08_2 0.00001 0.00002 0.012 0.013 0.015 0.015 0.019 0.019 0.019 0.019 0.019 0.014 0.015 0.015	CPXV_JagK re08_1 0.000002 0.012 0.013 0.015 0.013 0.019 0.019 0.019 0.014 0.015 0.015	CPXV_Hu mLan08_1 0.012 0.013 0.015 0.013 0.019 0.019 0.019 0.019 0.014 0.015 0.015	CPXV_Ger 2017_Vole 0.005 0.007 0.010 0.008 0.014 0.014 0.014 0.011 0.011	CPXV_Ger 2017_Alpa ca2 0.005 0.011 0.009 0.015 0.015 0.015 0.011 0.011 0.011 0.011 0.012	CPXV_Ger 2015_Cat2 0.013 0.011 0.017 0.017 0.016 0.013 0.014 0.014	CPXV_Ger 2015_Hum an2 0.004 0.013 0.014 0.013 0.013 0.014 0.013 0.014	Bi t CPXV_Ger 2012_Alpa ca 0.012 0.012 0.012 0.012 0.012 0.012 0.012	ree of 87 Of CPXV_Ger 2014_Cat2 0.010 0.015 0.017 0.018 0.018	2XV whole ge CPXV_Ger 2010_Raco on 0.015 0.015 0.015 0.018 0.019 0.018	enomes CPXV_Ger 2010_Alpa ca 	CPXV_Hu mMag07_1 	CPXV_Hu mBer07_1	CPXV_Bea Ber04_1	CPXV_CatP ot07_1	CPXV_Ama _2015	CPXV_Ger 2013_Alpa ca	CPXV_Ger 2010_Rat	CPXV_Ger 1980_EP4	CPXV_Ger 2002_MKY	CPXV_Ger 2014_Cat1	CPXV_EleG ri07_1	CPXV_Ger 1971_EP1
CPXV_MonKre08_4           CPXV_JagKre08_1           CPXV_JagKre08_1           CPXV_HumLan08_1           CPXV_Ger2017_Vole           CPXV_Ger2015_Cat2           CPXV_Ger2015_Lalpaca           CPXV_Ger2012_Alpaca           CPXV_Ger2014_Cat2           CPXV_Ger2010_Racoon           CPXV_Ger2010_Alpaca           CPXV_Ger2010_Alpaca           CPXV_HumMag07_1           CPXV_BeaBer04_1           CPXV_Ger2015_21	CPXV_Mo nKre08_4 0.00001 0.00002 0.012 0.013 0.015 0.015 0.015 0.019 0.019 0.014 0.015 0.015 0.015	CPXV_lagK re08_2 0.00001 0.00002 0.012 0.013 0.015 0.015 0.019 0.019 0.019 0.019 0.019 0.019 0.015 0.015 0.015 0.015 0.014 0.014	CPXV_JagK re08_1 0.00002 0.012 0.013 0.015 0.015 0.015 0.019 0.019 0.019 0.014 0.015 0.015 0.015 0.015	CPXV_Hu mLan08_1 0.012 0.013 0.015 0.015 0.013 0.019 0.019 0.019 0.019 0.014 0.015 0.015 0.015 0.015	CPXV_Ger 2017_Vole 0.005 0.007 0.010 0.008 0.014 0.014 0.014 0.011 0.011 0.011	CPXV_Ger 2017_Alpa ca2 0.005 0.011 0.005 0.015 0.015 0.015 0.015 0.015 0.012 0.012 0.012	CPXV_Ger 2015_Cat2 0.013 0.011 0.017 0.016 0.013 0.014 0.014 0.013 0.014	CPXV_Ger 2015_Hum an2 0.004 0.013 0.014 0.013 0.014 0.013 0.014 0.014 0.014 0.014	Bi t CPXV_Ger 2012_Alpa ca 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012	ree of 87 OF CPXV_Ger 2014_Cat2 0.010 0.010 0.015 0.017 0.018 0.018 0.018	2XV whole ge CPXV_Ger 2010_Raco on 0.015 0.015 0.015 0.018 0.019 0.018 0.019 0.018	CPXV_Ger 2010_Alpa ca 	CPXV_Hu mMag07_ 1 	CPXV_Hu mBer07_1	CPXV_Bea Ber04_1	CPXV_CatP ot07_1	CPXV_Ama _2015	CPXV_Ger 2013_Alpa ca	CPXV_Ger 2010_Rat	CPXV_Ger 1980_EP4	CPXV_Ger 2002_MKY	CPXV_Ger 2014_Cat1	CPXV_EleG ri07_1	CPXV_Ger 1971_EP1
CPXV_MonKre08_4           CPXV_JagKre08_2           CPXV_JagKre08_1           CPXV_Ger2017_Vole           CPXV_Ger2017_Alpaca2           CPXV_Ger2015_Lat2           CPXV_Ger2015_Human2           CPXV_Ger2010_Alpaca           CPXV_Ger2010_Alpaca           CPXV_Ger2010_Alpaca           CPXV_Ger2010_Alpaca           CPXV_HumMag07_1           CPXV_HumMag07_1           CPXV_Ama_2015           CPXV_Ama_2012	CPXV_Mo nKre08_4 0.00001 0.00002 0.012 0.013 0.015 0.015 0.015 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.015 0.015 0.015	CPXV_lagK re08_2 0.00001 0.0002 0.013 0.015 0.015 0.015 0.019 0.019 0.019 0.019 0.019 0.019 0.015 0.015 0.015 0.015 0.014 0.017 0.017	CPXV_lagK re08_1 0.00002 0.012 0.013 0.015 0.015 0.015 0.015 0.019 0.019 0.019 0.019 0.019 0.019 0.015 0.015 0.015 0.015	CPXV_Hu mLan08_1 0.012 0.013 0.015 0.015 0.015 0.019 0.019 0.019 0.019 0.019 0.019 0.015 0.015 0.015 0.015 0.012	CPXV_Ger 2017_vole 0.005 0.007 0.010 0.008 0.014 0.014 0.014 0.014 0.011 0.011 0.011 0.011	CPXV_Ger 2017_Alpa ca2 0.005 0.011 0.005 0.015 0.015 0.015 0.015 0.011 0.012 0.012 0.012 0.012 0.012	CPXV_Ger 2015_Cat2 0.013 0.011 0.017 0.016 0.013 0.014 0.014 0.014 0.013 0.016	CPXV_Ger 2015_Hum an2 0.004 0.013 0.014 0.013 0.014 0.014 0.014 0.014 0.014 0.014 0.017 0.014	Bi t CPXV_Ger 2012_Alpa ca 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012	ree of 87 Of CPXV_Ger 2014_Cat2 0.010 0.015 0.017 0.018 0.018 0.018 0.021	2XV whole ge CPXV_Ger 2010_Raco on 0.015 0.015 0.015 0.018 0.019 0.018 0.018 0.021 0.021	CPXV_Ger 2010_Alpa ca 	CPXV_Hu mMag07_ 1	CPXV_Hu mBer07_1	CPXV_Bea Ber04_1	CPXV_CatP ot07_1	CPXV_Ama _2015	CPXV_Ger 2013_Alpa ca	CPXV_Ger 2010_Rat	CPXV_Ger 1980_EP4	CPXV_Ger 2002_MKY	CPXV_Ger 2014_Cat1	CPXV_EleG ri07_1	CPXV_Ger 1971_EP1
CPXV_MonKre08_4           CPXV_JagKre08_1           CPXV_JagKre08_1           CPXV_JagKre08_1           CPXV_Ger2017_Vole           CPXV_Ger2015_Cat2           CPXV_Ger2015_Lupaca           CPXV_Ger2014_Lat2           CPXV_Ger2014_Cat2           CPXV_Ger2010_Raccon           CPXV_Ger2010_Racca           CPXV_HumBer07_1           CPXV_HumBer07_1           CPXV_Ger2013_Alpaca           CPXV_Ham2_2015           CPXV_Ger2013_Alpaca	CPXV_Mo nKre08_4 0.00001 0.00001 0.00002 0.013 0.015 0.015 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.014 0.015 0.015 0.015 0.015	CPXV_lagK re08_2 0.00001 0.00002 0.013 0.015 0.013 0.019 0.019 0.019 0.019 0.019 0.014 0.015 0.014 0.015 0.015 0.015 0.015	CPXV_JagK re08_1 0.00002 0.012 0.013 0.015 0.013 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.015 0.015 0.015 0.015 0.015	CPXV_Hu mLan08_1 0.012 0.013 0.015 0.013 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.015 0.015 0.015 0.015	CPXV_Ger 2017_Vole 0.005 0.007 0.010 0.008 0.014 0.014 0.014 0.011 0.011 0.011 0.011 0.011 0.013 0.013	CPXV_Ger 2017_Alpa ca2 0.005 0.011 0.009 0.015 0.015 0.011 0.012 0.012 0.012 0.012 0.012 0.012	CPXV_Ger 2015_Cat2 0.013 0.011 0.017 0.016 0.013 0.014 0.014 0.013 0.016 0.015 0.025	CPXV_Ger 2015_Hum an2 0.004 0.013 0.014 0.013 0.014 0.013 0.014 0.014 0.014 0.014 0.014	Bi t CPXV_Ger 2012_Alpa ca 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012	ree of 87 Of CPXV_Ger 2014_Cat2 0.010 0.010 0.015 0.017 0.018 0.018 0.021 0.020 0.020	2XV whole ge CPXV_Ger 2010_Raco on 0.015 0.015 0.018 0.018 0.018 0.018 0.018 0.021 0.020	CPXV_Ger 2010_Alpa ca 	CPXV_Hu mMag07_1 1 0.002 0.002 0.002 0.001 0.000 0.001 0.006 0.007 0.015	CPXV_Hu mBer07_1	CPXV_Bea Ber04_1	CPXV_CatP ot07_1	CPXV_Ama _2015	CPXV_Ger 2013_Alpa ca	CPXV_Ger 2010_Rat	CPXV_Ger 1980_EP4	CPXV_Ger 2002_MKY	CPXV_Ger 2014_Cat1	CPXV_EleG ri07_1	CPXV_Ger 1971_EP1
CPXV_MonKre08_4           CPXV_JagKre08_1           CPXV_JagKre08_1           CPXV_HumLan08_1           CPXV_Ger2017_Vole           CPXV_Ger2017_Alpaca2           CPXV_Ger2015_Cat2           CPXV_Ger2015_Lalpaca2           CPXV_Ger2012_Alpaca2           CPXV_Ger2014_Cat2           CPXV_Ger2014_Cat2           CPXV_Ger2014_Alpaca           CPXV_MumBer07_1           CPXV_MumBer07_1           CPXV_Ger2013_Alpaca	CPXV_Mo nKre08_4 0.00001 0.00002 0.012 0.013 0.015 0.015 0.013 0.019 0.019 0.019 0.019 0.019 0.014 0.015 0.015 0.015 0.015 0.015 0.014 0.0015	CPXV_lagK re08_2 0.00001 0.00002 0.012 0.013 0.015 0.015 0.019 0.019 0.019 0.019 0.019 0.014 0.015 0.015 0.015 0.014 0.015	CPXV_JagK re08_1 0.00002 0.012 0.013 0.015 0.015 0.015 0.019 0.019 0.019 0.019 0.019 0.014 0.015 0.015 0.015 0.015 0.014 0.017 0.016 0.023	CPXV_Hu mLan08_1 0.012 0.013 0.015 0.015 0.013 0.019 0.019 0.019 0.019 0.014 0.015 0.015 0.015 0.015 0.014 0.017 0.016 0.023	CPXV_Ger 2017_Vole 0.005 0.007 0.010 0.010 0.014 0.014 0.014 0.011 0.011 0.011 0.013 0.013 0.020	CPXV_Ger 2017_Alpa ca2 0.005 0.011 0.005 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.012 0.012 0.012 0.012	CPXV_Ger 2015_Cat2 0.013 0.011 0.017 0.017 0.016 0.013 0.014 0.013 0.016 0.013 0.016 0.013 0.016	CPXV_Ger 2015_Hum an2 0.004 0.013 0.014 0.013 0.013 0.013 0.013 0.014 0.017 0.016 0.023 0.023	Bi t CPXV_Ger 2012_Alpa ca 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012	ree of 87 Of CPXV_Ger 2014_Cat2 0.010 0.010 0.015 0.017 0.018 0.021 0.020 0.027 0.020	2XV whole ge CPXV_Ger 2010_Raco on 0.015 0.015 0.015 0.018 0.019 0.018 0.019 0.018 0.021 0.020 0.027 0.020	CPXV_Ger 2010_Alpa ca 	CPXV_Hu mMag07_ 1 	CPXV_Hu mBer07_1	CPXV_Bea Ber04_1	CPXV_CatP ot07_1	CPXV_Ama _2015	CPXV_Ger 2013_Alpa ca	CPXV_Ger 2010_Rat	CPXV_Ger 1980_EP4	CPXV_Ger 2002_MKY	CPXV_Ger 2014_Cat1	CPXV_EleG ri07_1	CPXV_Ger 1971_EP1
CPXV_MonKre08_4           CPXV_JagKre08_2           CPXV_JagKre08_1           CPXV_HumLan08_1           CPXV_Ger2017_Alpaca2           CPXV_Ger2017_Alpaca2           CPXV_Ger2015_Lat2           CPXV_Ger2012_Alpaca           CPXV_Ger2014_Cat2           CPXV_Ger2010_Alpaca           CPXV_Ger2010_Alpaca           CPXV_HumMag07_1           CPXV_Ger2010_Alpaca           CPXV_HumBag07_1           CPXV_Ger2010_Alpaca           CPXV_Ger2010_Alpaca	CPXV_Mo nKre08_4 0.00001 0.00002 0.012 0.013 0.015 0.015 0.013 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.016 0.012 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.011 0.019 0.011 0.019 0.011 0.011 0.011 0.015 0.012 0.012 0.012 0.013 0.015 0.019 0.019 0.019 0.011 0.019 0.011 0.001 0.019 0.011 0.012 0.0	CPXV_lagK re08_2 0.00001 0.00002 0.012 0.013 0.015 0.015 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.015 0.015 0.015 0.015 0.015 0.015 0.016 0.016 0.016 0.016 0.016 0.016 0.016 0.016 0.017 0.019 0.011 0.019 0.019 0.019 0.011 0.019 0.019 0.011 0.019 0.011 0.019 0.011 0.019 0.011 0.011 0.019 0.011 0.012 0.0	CPXV_JagK re08_1 0.00002 0.012 0.013 0.015 0.015 0.015 0.019 0.019 0.019 0.019 0.019 0.019 0.015 0.015 0.015 0.015 0.015 0.016 0.016 0.017 0.016 0.023 0.026	CPXV_Hu mLan08_1 0.012 0.013 0.015 0.015 0.013 0.019 0.019 0.019 0.019 0.019 0.019 0.015 0.015 0.015 0.015 0.015 0.015 0.012 0.012	CPXV_Ger 2017_Vole 0.005 0.007 0.010 0.008 0.014 0.014 0.014 0.011 0.011 0.011 0.011 0.013 0.013 0.020 0.022	CPXV_Ger 2017_Alpa ca2 0.005 0.011 0.005 0.015 0.015 0.015 0.015 0.015 0.015 0.012 0.012 0.012 0.012 0.014 0.021 0.023	CPXV_Ger 2015_Cat2 0.013 0.011 0.017 0.016 0.013 0.014 0.014 0.013 0.015 0.023 0.025 0.025	CPXV_Ger 2015_Hum an2 	Bi t CPXV_Ger 2012_Alpa ca 0.012	ree of 87 Of CPXV_Ger 2014_Cat2 	2XV whole ge CPXV_Ger 2010_Raco on 0.015 0.015 0.018 0.019 0.018 0.019 0.018 0.019 0.021 0.022 0.022 0.022	Promes CPXV_Ger 2010_Alpa ca 	CPXV_Hu mMag07_ 1	CPXV_Hu mBer07_1	CPXV_Bea Ber04_1	CPXV_CatP ot07_1	CPXV_Ama _2015	CPXV_Ger 2013_Alpa ca	CPXV_Ger 2010_Rat	CPXV_Ger 1980_EP4	CPXV_Ger 2002_MKY	CPXV_Ger 2014_Cat1	CPXV_EleG ri07_1	CPXV_Ger 1971_EP1
CPXV_MonKre08_4           CPXV_JagKre08_2           CPXV_JagKre08_1           CPXV_HumLa08_1           CPXV_Ger2017_Alpaca2           CPXV_Ger2015_Ca12           CPXV_Ger2015_Luman2           CPXV_Ger2014_Ca12           CPXV_Ger2010_Alpaca           CPXV_Ger2010_Alpaca           CPXV_HumMag07_1           CPXV_HumMag07_1           CPXV_Ger2013_Alpaca           CPXV_Ger2010_Alpaca           CPXV_Ger2010_Japaca           CPXV_Ger2010_Japaca           CPXV_Ger2010_Japaca           CPXV_Ger2010_Japaca           CPXV_Ger2010_Japaca           CPXV_Ger2010_Japaca           CPXV_Ger2013_Alpaca           CPXV_Ger2013_Alpaca           CPXV_Ger2010_Rat           CPXV_Ger2014_Ca14           CPXV_Ger2014_Alpaca           CPXV_Ger2014_Ca14           CPXV_Ger2014_Ca14	CPXV_Mo nKre08_4 0.00001 0.00001 0.00002 0.013 0.013 0.015 0.013 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.014 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.015 0.015 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.011 0.019 0.011 0.019 0.011 0.019 0.011 0.011 0.019 0.011 0.011 0.019 0.011 0.011 0.019 0.011 0.019 0.011 0.011 0.019 0.011 0.011 0.011 0.011 0.019 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.013 0.015 0.013 0.015 0.013 0.013 0.019 0.012 0.0012 0.0120	CPXV_lagK re08_2 0.00001 0.0002 0.013 0.015 0.015 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.014 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.015 0.015 0.015 0.019 0.019 0.019 0.015 0.015 0.019 0.019 0.019 0.011 0.015 0.019 0.019 0.011 0.015 0.015 0.015 0.015 0.019 0.019 0.015 0.015 0.015 0.015 0.019 0.019 0.015 0.015 0.015 0.015 0.019 0.019 0.015 0.015 0.015 0.015 0.019 0.012 0.015 0.020 0.015 0.015 0.015 0.020 0.015 0.0200000000	CPXV_lagK re08_1 0.00002 0.012 0.013 0.015 0.013 0.019 0.019 0.019 0.019 0.019 0.019 0.014 0.015 0.014 0.015 0.015 0.015 0.015 0.015 0.015 0.012 0.015 0.015 0.015 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.012 0.012 0.019 0.019 0.019 0.012 0.012 0.019 0.019 0.019 0.012 0.012 0.019 0.019 0.019 0.012 0.012 0.019 0.019 0.019 0.012 0.012 0.012 0.012 0.012 0.019 0.019 0.012 0.012 0.012 0.012 0.013 0.015 0.013 0.015 0.013 0.019 0.014 0.015 0.015 0.015 0.015 0.012 0.012 0.012 0.012 0.012 0.012 0.013 0.012 0.013 0.012 0.013 0.012 0.013 0.012 0.013 0.014 0.015 0.015 0.015 0.015 0.015 0.014 0.015 0.015 0.015 0.015 0.015 0.014 0.015 0.012 0.010	CPXV_Hu mLan08_1 0.012 0.013 0.015 0.013 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.014 0.015 0.015 0.015 0.015 0.015 0.012 0.012	CPXV_Ger 2017_Vole 0.005 0.007 0.010 0.008 0.014 0.014 0.014 0.014 0.011 0.011 0.011 0.011 0.011 0.013 0.020 0.022 0.016	CPXV_Ger 2017_Alpa ca2 0.005 0.011 0.009 0.015 0.015 0.015 0.015 0.015 0.015 0.012 0.012 0.012 0.012 0.012 0.012 0.014 0.023 0.017 0.017	CPXV_Ger 2015_Cat2 0.013 0.011 0.017 0.016 0.013 0.014 0.013 0.014 0.013 0.014 0.013 0.015 0.023 0.025 0.019 0.013	CPXV_Ger 2015_Hum an2 0.004 0.013 0.014 0.013 0.014 0.013 0.014 0.014 0.014 0.014 0.014 0.014 0.014 0.014 0.013 0.015 0.002 0.002 0.002 0.002 0.002 0.002 0.002 0.002 0.00100000000	Bi t CPXV_Ger 2012_Alpa ca 0.012	ree of 87 Of CPXV_Ger 2014_Cat2 0.010 0.015 0.017 0.018 0.018 0.021 0.020 0.027 0.029 0.023 0.013	2XV whole ge CPXV_Ger 2010_Raco on 0.015 0.015 0.015 0.018 0.019 0.018 0.018 0.021 0.022 0.022 0.023 0.013	Promes CPXV_Ger 2010_Alpa ca 	CPXV_Hu mMag07_ 1 	CPXV_Hu mBer07_1	CPXV_Bea Ber04_1	CPXV_CatP ot07_1	CPXV_Ama _2015	CPXV_Ger 2013_Alpa ca 	CPXV_Ger 2010_Rat	CPXV_Ger 1980_EP4	CPXV_Ger 2002_MKY	CPXV_Ger 2014_Cat1	CPXV_EleG ri07_1	CPXV_Ger 1971_EP1
CPXV_MonKre08_4           CPXV_JagKre08_1           CPXV_JagKre08_1           CPXV_JagKre08_1           CPXV_Ger2017_Alpaca2           CPXV_Ger2015_Cat2           CPXV_Ger2015_Lat2           CPXV_Ger2014_Lat2           CPXV_Ger2014_Cat2           CPXV_Ger2010_Raccon           CPXV_HumBa07_1           CPXV_HumBer07_1           CPXV_Ger2013_Alpaca           CPXV_HumBer07_1           CPXV_Ger2013_Alpaca           CPXV_Ger2013_Alpaca           CPXV_Ger2013_Alpaca           CPXV_Ger2013_Alpaca           CPXV_Ger2014_Cat1           CPXV_Ger2014_Cat1           CPXV_Ger2014_Cat1           CPXV_Ger2014_Cat1           CPXV_Ger2013_Alpaca           CPXV_Ger2014_Cat1           CPXV_Ger2014_Cat1	CPXV_Mo nKre08_4 0.00001 0.00002 0.013 0.013 0.015 0.015 0.013 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.019 0.015 0.015 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.011 0.019 0.019 0.011 0.019 0.019 0.011 0.011 0.011 0.019 0.019 0.011 0.011 0.011 0.011 0.019 0.011 0.012 0.012 0.011 0.011 0.011 0.011 0.012 0.012 0.012 0.012 0.011 0.011 0.011 0.012 0.0	CPXV_lagK re08_2 0.00001 0.00002 0.013 0.013 0.015 0.013 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.011 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.011 0.011 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.013 0.015 0.015 0.015 0.015 0.015 0.015 0.019 0.019 0.019 0.019 0.019 0.011 0.019 0.011 0.019 0.011 0.019 0.011 0.011 0.019 0.011 0.011 0.015 0.015 0.011 0.015 0.015 0.015 0.011 0.012 0.012 0.011 0.011 0.011 0.012 0.012 0.012 0.011 0.011 0.011 0.011 0.012 0.0	CPXV_JagK re08_1 0.00002 0.012 0.013 0.015 0.013 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.014 0.015 0.015 0.015 0.015 0.015 0.014 0.015 0.023 0.026 0.020 0.014 0.014	CPXV_Hu mLan08_1 0.012 0.013 0.015 0.013 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.019 0.012 0.015 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.013 0.015 0.015 0.015 0.015 0.019 0.011 0.015 0.019 0.019 0.019 0.011 0.015 0.019 0.019 0.019 0.011 0.011 0.011 0.019 0.019 0.011 0.011 0.011 0.011 0.019 0.019 0.011 0.010 0.0110 0.0110 0.0110 0.01100000000	CPXV_Ger 2017_Vole 0.005 0.007 0.010 0.008 0.014 0.014 0.014 0.011 0.011 0.011 0.011 0.013 0.013 0.020 0.022 0.016 0.011 0.009	CPXV_Ger 2017_Alpa ca2 0.005 0.011 0.005 0.015 0.015 0.015 0.015 0.011 0.012 0.012 0.012 0.012 0.012 0.013 0.014 0.021 0.023 0.017 0.012	CPXV_Ger 2015_Cat2 0.013 0.011 0.017 0.016 0.013 0.014 0.013 0.016 0.015 0.023 0.025 0.019 0.013 0.013	CPXV_Ger 2015_Hum an2 0.004 0.013 0.014 0.013 0.014 0.013 0.014 0.014 0.014 0.017 0.016 0.023 0.025 0.019 0.014 0.014	Bi t CPXV_Ger 2012_Alpa ca 0.012	ree of 87 Of CPXV_Ger 2014_Cat2 0.014_Cat2 0.015 0.015 0.015 0.017 0.018 0.018 0.018 0.021 0.020 0.027 0.022 0.023 0.018 0.018	2XV whole ge CPXV_Ger 2010_Raco on 0.015 0.015 0.015 0.018 0.018 0.018 0.018 0.021 0.020 0.027 0.022 0.023 0.018	CPXV_Ger 2010_Alpa ca ca ca ca ca ca ca ca ca ca ca ca ca	CPXV_Hu mMag07_1 1 0.002 0.002 0.001 0.006 0.007 0.015 0.017 0.011 0.009 0.011	CPXV_Hu mBer07_1	CPXV_Bea Ber04_1	CPXV_CatP ot07_1	CPXV_Ama _2015	CPXV_Ger 2013_Alpa ca 	CPXV_Ger 2010_Rat	CPXV_Ger 1980_EP4	CPXV_Ger 2002_MKY	CPXV_Ger 2014_Cat1	CPXV_EleG ri07_1	CPXV_Ger 1971_EP1

	1	1	1	1					IVIL	tree of 87 C	PXV core ge	enomes		1	1					1	1	1		
	CRYV C	CRYV C	CRYV C	CRYV C	CRYV C	CRYV C	CRYV C	CRYV C	CRYV C	CRYV C	CRYV C	CRYV C	CRYV C	CRYV C	CRYV R	CBXV H	CRYV C	CBXV H				CRYV In	CRYV M	CRYV In
	or 1971	or2010 A	or2010 E	or2014 C	or2015 H	or2012 A	or2017 V	or2015 C	or2017 A	or2014_C	or2013 A	or2002	or2010 B	or1980 E	opBor04	umBor07	atPot07		CPXV_A	CPXV_EI	uml an08	akrong	onKro08	akrong
	EP1	lpaca	er2010_R	912014_C	er2015_H	lpaca	012017_V	912015_0	er2017_A	912014_C	lpaca	MKY	er2010_K	BA	eaber04_	1	1	7 1	ma_2015	eGri07_1	1	gKieuo_ 1	UNKIE08	2
	EFI	праса	accon	atz	umanz	ipaca	Ole	auz	ipacaz	ati	праса	WIN I	aı	F4		-'		· - ·					_*	2
CPXV Ger 1971 EP1																								
CPXV Ger2010 Alpaca	0.022																							
CPXV Ger2010 Racoon	0.022	0.015																						
CPXV_Ger2014_Cat2	0.022	0.015	0.010																					
CPXV_Ger2015_Human2	0.018	0.013	0.013	0.013																				
CPXV Ger2012 Alpaca	0.017	0.011	0.012	0.011	0.004																			
CPXV_Ger2017_Vole	0.015	0.014	0.014	0.014	0.010	0.008																		
CPXV_Ger2015_Cat2	0.018	0.016	0.017	0.016	0.012	0.011	0.007																	
CPXV_Ger2017_Alpaca2	0.016	0.015	0.015	0.015	0.011	0.009	0.005	0.005																
CPXV_Ger2014_Cat1	0.017	0.018	0.018	0.018	0.013	0.012	0.010	0.013	0.012															
CPXV_Ger2013_Alpaca	0.019	0.019	0.020	0.019	0.015	0.014	0.012	0.015	0.014	0.011														
CPXV_Ger2002_MKY	0.023	0.023	0.023	0.023	0.019	0.017	0.016	0.018	0.017	0.015	0.006													
CPXV_Ger2010_Rat	0.026	0.026	0.027	0.026	0.022	0.021	0.019	0.022	0.020	0.018	0.009	0.007												
CPXV_Ger1980_EP4	0.028	0.028	0.029	0.029	0.024	0.023	0.021	0.024	0.023	0.020	0.011	0.009	0.005											
CPXV_BeaBer04_1	0.018	0.018	0.018	0.018	0.013	0.012	0.010	0.013	0.012	0.009	0.008	0.011	0.015	0.017										
CPXV_HumBer07_1	0.018	0.018	0.019	0.018	0.014	0.013	0.011	0.014	0.012	0.010	0.009	0.012	0.016	0.018	0.002									
CPXV_CatPot07_1	0.017	0.017	0.018	0.018	0.013	0.012	0.010	0.013	0.012	0.009	0.008	0.011	0.015	0.017	0.001	0.001								
CPXV_HumMag07_1	0.017	0.017	0.017	0.017	0.013	0.011	0.010	0.013	0.011	0.009	0.007	0.011	0.014	0.016	0.001	0.002	0.001							
CPXV_Ama_2015	0.020	0.020	0.020	0.020	0.016	0.015	0.013	0.016	0.014	0.012	0.011	0.014	0.018	0.020	0.007	0.007	0.006	0.006						
CPXV_EleGri07_1	0.014	0.016	0.016	0.016	0.012	0.010	0.009	0.012	0.010	0.011	0.013	0.017	0.020	0.022	0.011	0.012	0.011	0.011	0.014					
CPXV_HumLan08_1	0.015	0.019	0.019	0.019	0.015	0.013	0.012	0.015	0.013	0.014	0.016	0.019	0.023	0.025	0.014	0.015	0.014	0.014	0.017	0.011				
CPXV_JagKre08_1	0.015	0.019	0.019	0.019	0.015	0.013	0.012	0.015	0.013	0.014	0.016	0.019	0.023	0.025	0.014	0.015	0.014	0.014	0.017	0.011	0.000			
CPXV_MonKre08_4	0.015	0.019	0.019	0.019	0.015	0.013	0.012	0.015	0.013	0.014	0.016	0.019	0.023	0.025	0.014	0.015	0.014	0.014	0.017	0.011	0.000	0.000		
CPXV_JagKre08_2	0.015	0.019	0.019	0.019	0.015	0.013	0.012	0.015	0.013	0.014	0.016	0.019	0.023	0.025	0.014	0.015	0.014	0.014	0.017	0.011	0.000	0.000	0.000	
	1	1	1	1					BI	tree of 87 O	PXV core ge	nomes	1	1	1			r	1	1		1		
	CPXV H	CPXV_C	CPXV B	CPXV H		CPXV_G	CPXV_G	CPXV_G	CPXV_G	CPXV_G	CPXV_G	CPXV G	CPXV G	CPXV G	CPXV_G	CPXV_G	CPXV_G	CPXV_G		CPXV_M	CPXV_Ja	CPXV_Ja	CPXV_H	CPXV_G
	umBer07	atPot07	eaBer04	umMag0	CPXV_A	er2013_A	er2010_R	er1980_E	er2002	er2014_C	er2017_V	er2017_A	er2015_C	er2010_A	er2014_C	er2010_R	er2015_H	er2012_A	CPXV_EI	onKre08	gKre08	gKre08	umLan08	er_1971
	_1	1 -	1	7_1	ma_2015	Ipaca	at	P4	MKY	at1	ole	lpaca2	at2	Ipaca	at2	acoon	uman2	Ipaca	30107_1	_4	i 1 -	2	_1	EP1
CPXV HumBer07 1	1			1						1		1		1						-		1		
CPXV CatPot07 1	0.001																							
CPXV BeaBer04 1	0.002	0.001																						
CPXV_HumMag07_1	0.002	0.001	0.001																					
CPXV_Ama_2015	0.007	0.006	0.006	0.006																				
CPXV_Ger2013_Alpaca	0.009	0.008	0.008	0.007	0.011																			
CPXV_Ger2010_Rat	0.016	0.015	0.015	0.014	0.017	0.009																		
CPXV_Ger1980_EP4	0.018	0.017	0.017	0.016	0.019	0.011	0.005																	
CPXV_Ger2002_MKY	0.012	0.011	0.011	0.011	0.014	0.006	0.006	0.009																
CPXV_Ger2014_Cat1	0.010	0.009	0.009	0.009	0.012	0.011	0.018	0.020	0.015															
CPXV_Ger2017_Vole	0.011	0.010	0.010	0.010	0.013	0.012	0.019	0.021	0.016	0.010														
CPXV_Ger2017_Alpaca2	0.012	0.011	0.012	0.011	0.014	0.013	0.020	0.022	0.017	0.011	0.005													
CPXV_Ger2015_Cat2	0.014	0.013	0.013	0.013	0.016	0.015	0.022	0.024	0.018	0.013	0.007	0.005												
CPXV_Ger2010_Alpaca	0.018	0.017	0.017	0.017	0.020	0.019	0.026	0.028	0.022	0.017	0.014	0.015	0.016											
CPXV_Ger2014_Cat2	0.018	0.017	0.017	0.017	0.020	0.019	0.026	0.028	0.023	0.017	0.014	0.015	0.016	0.014										
CPXV_Ger2010_Racoon	0.018	0.018	0.018	0.017	0.020	0.019	0.026	0.028	0.023	0.017	0.014	0.015	0.016	0.015	0.010									
CPXV_Ger2015_Human2	0.014	0.013	0.013	0.013	0.016	0.015	0.022	0.024	0.018	0.013	0.009	0.011	0.012	0.013	0.013	0.013	0.004							
CPXV_Ger2012_Alpaca	0.013	0.012	0.012	0.011	0.014	0.014	0.020	0.022	0.017	0.012	0.008	0.009	0.011	0.011	0.011	0.012	0.004	0.010						
	0.012	0.011	0.011	0.011	0.014	0.013	0.020	0.022	0.016	0.011	0.009	0.010	0.012	0.016	0.016	0.016	0.012	0.010	0.014					
	0.015	0.014	0.014	0.014	0.017	0.016	0.023	0.025	0.019	0.014	0.012	0.013	0.015	0.019	0.019	0.019	0.015	0.013	0.011	0.000				
CPXV_JagKre08_1	0.015	0.014	0.014	0.014	0.017	0.016	0.023	0.025	0.019	0.014	0.012	0.013	0.015	0.019	0.019	0.019	0.015	0.013	0.011	0.000	0.000			
CRXV_buml an08_1	0.015	0.014	0.014	0.014	0.017	0.016	0.023	0.025	0.019	0.014	0.012	0.013	0.015	0.019	0.019	0.019	0.015	0.013	0.011	0.000	0.000	0.000		
CPXV Ger 1971 EP1	0.018	0.017	0.017	0.017	0.020	0.019	0.026	0.028	0.022	0.017	0.015	0.016	0.018	0.022	0.022	0.022	0.018	0.016	0.014	0.015	0.015	0.015	0.015	
	0.013	0.017	0.017	0.017	0.020	0.013	0.020	0.020	0.022 MI	tree of OPY	/ orthogolou	IS PEDES	0.010	0.022	0.022	0.022	0.010	0.010	0.014	0.013	0.013	0.013	0.015	۱
	1	1	1	1	1				IVIE			Jo genes	1	1	1			1	1	1		1		
	CPXV_M	CPXV_Ja	CPXV_Ja	CPXV_H	CPXV_G	CPXV F	CPXV_G	CPXV_G	CPXV_G	CPXV_G	CPXV_G	CPXV_G	CPXV_G	CPXV A	CPXV_B	CPXV_H	CPXV_C	CPXV_H	CPXV_G	CPXV_G	CPXV_G	CPXV_G	CPXV_G	CPXV_G
	onKre08	gKre08_	gKre08_	umLan08	er1971_E	eGri07 1	er2010_R	er2014_C	er2015_H	er2012_A	er2017_V	er2017_A	er2015_C	ma 2015	eaBer04_	umBer07	atPot07_	umMag0	er2014_C	er2013_A	er2002_	er2010_R	er1980_E	er2010_A
	_4	2	1	_1	P1		accoon	at2	uman2	Ipaca	ole	Ipaca2	at2	1	1	_1	1	7_1	at1	Ipaca	MKY	at	P4	Ipaca
CPXV MonKre08 4				1									1	1										
CPXV_JagKre08_2	0.000			1						1			1	1								l		
CPXV_JagKre08_1	0.000	0.000																						
CPXV_HumLan08_1	0.000	0.000	0.000	1						1			1									1		
CPXV_Ger1971_EP1	0.017	0.017	0.017	0.017																				
CPXV_EleGri07_1	0.012	0.012	0.012	0.012	0.013																			
CPXV_Ger2010_Raccoon	0.020	0.020	0.020	0.020	0.023	0.018																		
CPXV_Ger2014_Cat2	0.019	0.019	0.019	0.019	0.023	0.018	0.011																	
CPXV_Ger2015_Human2	0.013	0.013	0.013	0.013	0.016	0.011	0.010	0.009		1														
CPXV_Ger2012_Alpaca	0.011	0.011	0.011	0.011	0.015	0.010	0.011	0.011	0.004		L	I								I				
CPXV_Ger2017_Vole	0.012	0.012	0.012	0.012	0.015	0.010	0.016	0.016	0.009	0.008	0.005	-		+	I			-		I				
CPAV_Ger2017_Alpaca2	0.012	0.012	0.012	0.012	0.016	0.011	0.017	0.016	0.010	0.008	0.005	0.005		+	I					I				
CPAV_Ger2015_Cat2	0.014	0.014	0.014	0.014	0.018	0.013	0.019	0.018	0.012	0.010	0.007	0.005	0.046	+	I					I				
CPXV_Ama_2015	0.014	0.014	0.014	0.014	0.018	0.013	0.019	0.019	0.012	0.010	0.009	0.010	0.012	0.007										
CPXV_BeaBer04_1	0.015	0.015	0.015	0.015	0.019	0.014	0.020	0.019	0.013	0.011	0.010	0.011	0.013	0.007	0.002									
	0.016	0.016	0.016	0.016	0.020	0.015	0.021	0.020	0.014	0.012	0.011	0.012	0.014	0.008	0.002	0.002								
CPXV HumMad07 1	0.015	0.015	0.015	0.015	0.019	0.014	0.020	0.019	0.013	0.011	0.010	0.010	0.013	0.007	0.001	0.002	0.001		-					
CPXV Ger2014 Cat1	0,020	0.020	0,020	0,020	0.024	0.019	0.025	0.024	0.012	0.016	0.015	0.015	0.012	0.012	0.009	0.002	0.009	0.008						
CPXV Ger2013 Alpaca	0.020	0.020	0.020	0.020	0.024	0.019	0.025	0.024	0.017	0.016	0.015	0.015	0.018	0.011	0.009	0.010	0.009	0.008	0.009	1				
CPXV_Ger2002_MKY	0.022	0.022	0.022	0.022	0.026	0.021	0.027	0.026	0.019	0.018	0.017	0.018	0.020	0.014	0.011	0.012	0.011	0.010	0.012	0.005		l		
CPXV_Ger2010_Rat	0.027	0.027	0.027	0.027	0.030	0.025	0.031	0.031	0.024	0.023	0.022	0.022	0.024	0.018	0.015	0.016	0.015	0.015	0.016	0.009	0.007			
CPXV_Ger1980_EP4	0.028	0.028	0.028	0.028	0.032	0.027	0.033	0.032	0.026	0.024	0.023	0.024	0.026	0.020	0.017	0.018	0.017	0.016	0.018	0.011	0.009	0.006		
CPXV Ger2010 Alpaca	0.017	0.017	0.017	0.017	0.021	0.016	0.022	0.021	0.015	0.013	0.012	0.013	0.015	0.012	0.013	0.014	0.013	0.012	0.019	0.019	0.020	0.024	0.026	

											А													
	CPXV_Ger20	CPXV_Ger20	CPXV_HumL					CPXV_Ger20	CPXV_Ger20	CPXV_Ger20	CPXV_Ger20				CPXV_Ger20	CPXV_Ger19	CPXV_Hum	CPXV_Hum	CPXV_Ger20	CPXV_Ger19	CPXV_Ger20	CPXV_Ger20	CPXV_Ger20	CPXV_Ge
	14_Cat2_201	15_Cat2_201	an08_1_200	CPXV_JagKr	CPXV_JagKr	CPXV_MonK	CPXV_Ama_	10_Alpaca_2	12 Alpaca 2	17_Alpaca2	17_Vole_20	CPXV_BeaB	CPXV_CatPo	CPXV_EleGr	15_Human2	71_EP1_197	Ber07_1_20	Mag07_1_20	14_Cat1_201	80_EP4_198	10_Racoon_	02_MKY_200	13_Alpaca_2	r2010 Ra
	4	5	8	eu8_1_2008	eu8_2_2008	reu8_4_2008	2015	010	012	2017	17	er04_1_2004	10/_1_200/	10/_1_200/	_2015	1	07	07	4	0	2010	2	013	t_2010
CPXV_Ger2014_Cat2_2014																								
CPXV_Ger2015_Cat2_2015	0.007																							
CPXV_HumLan08_1_2008	0.009	0.006																						
CPXV_JagKre08_1_2008	0.009	0.006	0.000																					
CPXV_JagKre08_2_2008	0.009	0.006	0.000	0.000																				
CPXV_MonKre08_4_2008	0.009	0.006	0.000	0.000	0.000																			
CPXV_Ama_2015	0.008	0.006	0.007	0.007	0.007	0.007																		
CPXV_Ger2010_Alpaca_2010	0.009	0.009	0.010	0.010	0.010	0.010	0.007																	
CPXV_Ger2012_Alpaca_2012	0.007	0.005	0.007	0.007	0.007	0.007	0.005	0.007																
CPXV_Ger2017_Alpaca2_2017	0.007	0.003	0.006	0.006	0.006	0.006	0.004	0.007	0.003															
CPXV_Ger2017_Vole_2017	0.008	0.005	0.006	0.006	0.006	0.006	0.005	0.008	0.004	0.003														
CPXV_BeaBer04_1_2004	0.008	0.008	0.009	0.009	0.009	0.009	0.003	0.008	0.007	0.007	0.006													
CPXV_CatPot07_1_2007	0.008	0.007	0.008	0.008	0.008	0.008	0.003	0.007	0.007	0.006	0.005	0.001												
CPXV_EleGri07_1_2007	0.008	0.006	0.007	0.007	0.007	0.007	0.006	0.007	0.005	0.005	0.004	0.006	0.005											
CPXV_Ger2015_Human2_2015	0.007	0.007	0.007	0.007	0.007	0.007	0.006	0.009	0.003	0.005	0.006	0.008	0.007	0.006			-						-	
CPXV_Ger1971_EP1_1971	0.012	0.010	0.011	0.011	0.011	0.011	0.010	0.010	0.009	0.009	0.010	0.010	0.010	0.009	0.010									
CPXV_HumBer0/_1_200/	0.008	0.007	0.008	0.008	0.008	0.008	0.003	0.007	0.007	0.006	0.006	0.001	0.001	0.006	0.007	0.010								
CPXV_HumMag0/_1_200/	0.008	0.008	0.008	0.008	0.008	0.008	0.003	0.007	0.007	0.006	0.006	0.002	0.001	0.006	0.007	0.010	0.001	0.000						
CPXV_Ger2014_Cat1_2014	0.010	0.009	0.009	0.009	0.009	0.009	0.007	0.009	0.008	0.007	0.006	0.007	0.006	0.005	0.008	0.010	0.007	0.006	0.010					
CPXV_Ger1980_EP4_1980	0.011	0.013	0.013	0.013	0.013	0.013	0.010	0.011	0.011	0.012	0.012	0.008	0.009	0.012	0.011	0.012	0.009	0.009	0.010	0.010				
CPXV_Ger2010_Racoon_2010	0.010	0.010	0.010	0.010	0.010	0.010	0.009	0.009	0.009	0.009	0.009	0.009	0.008	0.009	0.007	0.010	0.009	0.009	0.010	0.010	0.010			
CPXV_Ger2002_IVIK1_2002	0.011	0.011	0.011	0.011	0.011	0.011	0.009	0.010	0.010	0.011	0.010	0.007	0.008	0.010	0.010	0.011	0.008	0.008	0.009	0.000	0.010	0.002		
CPXV_Ger2010_Alpaca_2013	0.010	0.011	0.011	0.011	0.011	0.011	0.009	0.010	0.010	0.010	0.009	0.007	0.007	0.009	0.010	0.012	0.007	0.007	0.009	0.007	0.011	0.005	0.005	
	0.010	0.012	0.012	0.012	0.012	0.012	0.010	0.010	0.011	0.011	D	0.000	0.005	0.011	0.011	0.015	0.005	0.005	0.010	0.005	0.011	0.005	0.005	
	1						1		· · · · ·		Б				1	1		1				· · · · ·		CRXV. Go
	CPXV_MonK	CPXV_JagKr	CPXV_JagKr	CPXV_HumL	CPXV_Ger20	CPXV_EleGr	CPXV_Ger20	CPXV_Ger20	CPXV_Ger20	CPXV_Ger20	CPXV_Ger20	CPXV_Ger20	CPXV_Ger20	CPXV_Hum	CPXV_Hum	CPXV_BeaB	CPXV_Ama_	CPXV_Ger20	CPXV_CatPo	CPXV_Ger20	CPXV Ger19	CPXV Ger20	CPXV Ger20	1071 FD
					17 \/_ -					12 41	44 6 12	10 Racoon		Mag07 1	Ber07_1	er04 1	2015	42.41					-	
	re08_4	e08_2	e08_1	an08_1	17_vole	107_1	17_Alpaca2	15_Cat2	15_Human2	12_Albaca	14_Cat2	10_11000011	10_Alpaca	.0				13_Alpaca	t0/_1	10_Rat	80_EP4	02_MKY		119/1_EP
CPXV MonKre08 4	re08_4	e08_2	e08_1	an08_1	17_vole	107_1	17_Alpaca2	15_Cat2	15_Human2	12_Albaca	14_Cat2	10_1000011	10_Alpaca	.0				13_Alpaca	t0/_1	10_Rat	80_EP4	02_MKY		1
CPXV_MonKre08_4 CPXV_JagKre08_2	0.000	e08_2	e08_1	an08_1	1/_voie	i07_1	17_Alpaca2	15_Cat2	15_Human2	12_Alpaca	14_Cat2	10_1000011	10_Alpaca	.0				13_Alpaca	t0/_1	10_Rat	80_EP4	02_MKY	14_Cat1	1
CPXV_MonKre08_4 CPXV_JagKre08_2 CPXV_JagKre08_1	0.000	e08_2	e08_1	an08_1	17_vole	i07_1	17_Alpaca2	15_Cat2	15_Human2	12_Aipaca	14_Cat2	10_100001	10_Alpaca					13_Aipaca	t07_1	10_Rat	80_EP4	02_MKY	14_Cat1	1
CPXV_MonKre08_4 CPXV_JagKre08_2 CPXV_JagKre08_1 CPXV_HumLan08_1	0.000 0.000 0.000	e08_2	e08_1	an08_1	17_vole	i07_1	17_Alpaca2	15_Cat2	15_Human2		14_Cat2		10_Alpaca					13_Alpaca	t07_1	10_Rat	80_EP4	02_MKY	14_Cat1	1
CPXV_MonKre08_4 CPXV_jagKre08_2 CPXV_jagKre08_1 CPXV_HumLan08_1 CPXV_Ger2017_Vole	re08_4 0.000 0.000 0.000 0.007	e08_2 0.000 0.000 0.007	e08_1	an08_1	17_voie	i07_1	17_Alpaca2	15_Cat2	15_Human2		14_Cat2		10_Alpaca					13_Aipaca	t07_1	10_Rat	80_EP4	02_MKY	14_Cat1	11971_EP
CPXV_MonKre08_4 (PXV_JagKre08_2 CPXV_JagKre08_1 CPXV_HumLan08_1 (PXV_Ger2017_Vole CPXV_Elecri07_1	0.000 0.000 0.000 0.000 0.007 0.008	e08_2 0.000 0.000 0.007 0.008	e08_1	0.007 0.008	0.005	i07_1	17_Alpaca2	15_Cat2	15_Human2		14_Cat2		10_Alpaca					13_Aipaca	t07_1	10_Rat	80_EP4	02_MKY	14_Cat1	1 1
CPXV_MonKre08_4 CPXV_JagKre08_2 CPXV_JagKre08_1 CPXV_HumLan08_1 CPXV_Ger2017_Vole CPXV_EleGri07_1 CPXV_Ger2017_Alpaca2	0.000 0.000 0.000 0.007 0.008 0.007	0.000 0.000 0.007 0.008 0.007	e08_1 0.000 0.007 0.008 0.007	0.007 0.007 0.007	0.005	0.007	17_Alpaca2	15_Cat2	15_Human2		14_Cat2		10_Alpaca					13_Alpaca	t0/_1	10_Rat	80_EP4	02_MKY	14_Cat1	1 1971_EP
CPXV_MonKre08_4 CPXV_JagKre08_2 CPXV_JagKre08_1 CPXV_Ger2017_Vole CPXV_Ger2017_Vole CPXV_EleGn07_1 CPXV_Ger2017_Alpaca2 CPXV_Ger2015_Cat2	re08_4 0.000 0.000 0.000 0.007 0.008 0.007 0.007	0.000 0.000 0.007 0.008 0.007 0.007	e08_1 0.000 0.007 0.008 0.007 0.007	an08_1 0.007 0.008 0.007 0.007	0.005	0.007	17_Alpaca2	15_Cat2	15_Human2		14_Cat2		10_Alpaca					13_Aipaca	t07_1	10_Rat	80_EP4		14_Cat1	19/1_EP
CPXV_MonKre08_4           CPXV_JagKre08_2           CPXV_JagKre08_1           CPXV_Bruikan08_1           CPXV_Ger2017_Vole           CPXV_EleGri07_1           CPXV_Ger2017_Alpaca2           CPXV_Ger2015_cat2           CPXV_Ger2015_Human2	re08_4 0.000 0.000 0.000 0.007 0.008 0.007 0.007 0.008	e08_2 0.000 0.000 0.007 0.008 0.007 0.007 0.008	e08_1	an08_1 0.007 0.008 0.007 0.007 0.007	0.005 0.004 0.005 0.007	i07_1	17_Alpaca2	15_Cat2	15_Human2		14_Cat2		10_Alpaca					13_Aipaca	t07_1	10_Rat	80_EP4		14_Cat1	
CPXV_MonKre08_4 (PXV_JagKre08_2 (PXV_JagKre08_1 (PXV_Humlan08_1 (PXV_Ger2017_Vole (PXV_EleGri07_1 (PXV_Ger2017_Alpaca2 (PXV_Ger2015_Human2 (PXV_Ger2012_Alpaca	re08_4 0.000 0.000 0.007 0.008 0.007 0.007 0.008 0.008	e08_2 0.000 0.000 0.007 0.008 0.007 0.007 0.008 0.008	e08_1 0.000 0.007 0.008 0.007 0.008 0.007 0.008 0.008	an08_1 0.007 0.008 0.007 0.007 0.007 0.008 0.008	0.005 0.005 0.007 0.005	0.007 0.008 0.007 0.008	17_Alpaca2	15_Cat2	15_Human2				10_Alpaca					13_Aipaca		10_Rat	80_EP4		14_Cat1	
CPXV_MonKre08_4           CPXV_JagKre08_2           CPXV_JagKre08_1           CPXV_BagKre08_1           CPXV_Ger2017_Vole           CPXV_Ger2017_Vole           CPXV_Ger2017_Vole           CPXV_Ger2017_Vole           CPXV_Ger2017_Alpaca2           CPXV_Ger2015_Cat2           CPXV_Ger2015_Human2           CPXV_Ger2014_Jaca2	re08_4 0.000 0.000 0.007 0.008 0.007 0.007 0.008 0.007 0.008 0.008 0.011	e08_2 0.000 0.000 0.007 0.008 0.007 0.008 0.008 0.008 0.001	e08_1 0.000 0.007 0.008 0.007 0.008 0.007 0.008 0.008 0.008 0.011	an08_1 0.007 0.008 0.007 0.007 0.007 0.008 0.008 0.008	0.005 0.004 0.005 0.007 0.005 0.008	i07_1 0.007 0.008 0.007 0.009	17_Alpaca2	15_Cat2	15_Human2	12_Alpaca			10_Alpaca							10_Rat	80_EP4		14_Cat1	
CPXV_MonKre08_4           CPXV_JagKre08_2           CPXV_JagKre08_1           CPXV_Ger2017_Vole           CPXV_Ger2017_Vole           CPXV_Ger2017_Vole           CPXV_Ger2017_Vole           CPXV_Ger2017_Vole           CPXV_Ger2017_Vole           CPXV_Ger2015_Cat2           CPXV_Ger2015_Human2           CPXV_Ger2014_Alpaca           CPXV_Ger2014_Alpaca           CPXV_Ger2014_Alpaca           CPXV_Ger2014_Raca           CPXV_Ger2014_Raca           CPXV_Ger2014_Raca	re08_4 0.000 0.000 0.000 0.007 0.008 0.007 0.008 0.008 0.008 0.008 0.011 0.011	e08_2 0.000 0.000 0.007 0.008 0.007 0.008 0.007 0.008 0.001 0.011	e08_1 0.000 0.007 0.008 0.007 0.008 0.007 0.008 0.008 0.011 0.011	an08_1 0.007 0.008 0.007 0.008 0.007 0.008 0.008 0.008 0.011 0.011	0.005 0.004 0.005 0.007 0.005 0.007 0.005 0.008	0.007 0.008 0.007 0.008 0.007 0.007 0.009 0.010	17_Alpaca2	15_Cat2	15_Human2	12_AIpaca	14_Cat2		10_Alpaca					13_Aipaca		10_Rat	80_EP4	02_MKY	14_Cat1	
CPXV_MonKre08_4           CPXV_JagKre08_2           CPXV_JagKre08_1           CPXV_HumLan08_1           CPXV_Ger2017_Vole           CPXV_Ger2017_Alpaca2           CPXV_Ger2015_Cat2           CPXV_Ger2015_Human2           CPXV_Ger2015_Alpaca           CPXV_Ger2016_Racoon           CPXV_Ger2010_Alpaca	re08_4 0.000 0.000 0.000 0.007 0.008 0.007 0.008 0.007 0.008 0.008 0.008 0.011 0.011	e08_2 0.000 0.000 0.007 0.008 0.007 0.008 0.007 0.008 0.008 0.011 0.011	e08_1 0.000 0.007 0.008 0.007 0.008 0.007 0.008 0.008 0.011 0.011 0.011	0.007 0.008 0.007 0.008 0.007 0.008 0.001 0.011	0.005 0.004 0.005 0.004 0.005 0.007 0.005 0.008 0.009 0.008	0.007 0.007 0.008 0.007 0.009 0.010 0.010	17_Alpaca2	15_Cat2	15_Human2	0.007 0.008 0.008	0.008	0.009	10_Alpaca					13_Aipaca		10_Rat	80_EP4			
CPXV_MonKre08_4           CPXV_JagKre08_2           CPXV_JagKre08_1           CPXV_HumLan08_1           CPXV_Ger2017_Vole           CPXV_Ger2017_Vole           CPXV_Ger2017_Alpaca2           CPXV_Ger2015_Cat2           CPXV_Ger2015_LHuman2           CPXV_Ger2014_Cat2           CPXV_Ger2014_Cat2           CPXV_Ger2010_Racoon           CPXV_Ger2010_Racoa           CPXV_Ger2010_Racaa           CPXV_HumMag07_1	re08_4 0.000 0.000 0.007 0.007 0.007 0.007 0.007 0.008 0.007 0.008 0.011 0.011 0.011 0.009	e08_2 0.000 0.000 0.007 0.008 0.007 0.008 0.007 0.008 0.008 0.011 0.011 0.009	e08_1	0.007 0.008 0.007 0.008 0.007 0.008 0.008 0.008 0.011 0.011 0.011	0.005 0.004 0.005 0.004 0.005 0.007 0.005 0.008 0.009 0.008	i07_1	17_Alpaca2	15_Cat2	15_Human2	2_Alpaca	14_Cat2	0.009	10_Alpaca					13_Aipaca		10_Rat	80_EP4		14_Cat1	
CPXV_MonKre08_4 CPXV_JagKre08_2 CPXV_JagKre08_1 CPXV_Ger2017_Vole CPXV_EleGn07_1 CPXV_Ger2017_Vole CPXV_Ger2017_Alpaca2 CPXV_Ger2015_Cat2 CPXV_Ger2015_Lat2 CPXV_Ger2014_Cat2 CPXV_Ger2014_Cat2 CPXV_Ger2010_Alpaca CPXV_Ger2010_Alpaca CPXV_HumMag07_1 CPXV_HumMer07_1	re08_4 0.000 0.000 0.007 0.007 0.007 0.007 0.008 0.007 0.008 0.008 0.011 0.011 0.011 0.009 0.009	e08_2 0.000 0.000 0.007 0.008 0.007 0.008 0.007 0.008 0.008 0.011 0.011 0.011 0.019 0.009 0.009	e08_1	0.007 0.007 0.008 0.007 0.008 0.008 0.008 0.008 0.001 0.011 0.011 0.011 0.009 0.009	0.005 0.004 0.005 0.007 0.005 0.007 0.008 0.008 0.008 0.008 0.008	i07_1 0.007 0.008 0.007 0.009 0.010 0.010 0.010 0.010 0.007	17_Alpaca2	15_Cat2	15_Human2	0.007 0.008 0.007	14_Cat2	0.009 0.009	10_Alpaca	0.001				13_A(paca		10_Rat	80_EP4		14_Cat1	
CPXV_MonKre08_4           CPXV_JagKre08_2           CPXV_JagKre08_1           CPXV_Ger2017_Vole           CPXV_Ger2017_Vole           CPXV_Ger2017_Vole           CPXV_Ger2017_Vole           CPXV_Ger2017_Vole           CPXV_Ger2015_Cat2           CPXV_Ger2015_Human2           CPXV_Ger2015_Human2           CPXV_Ger2016_Alpaca           CPXV_Ger2010_Alpaca           CPXV_Ger2010_Alpaca           CPXV_HumMag07_1           CPXV_Mater07_1           CPXV_BeaBer04_1	re08_4 0.000 0.000 0.000 0.007 0.008 0.007 0.008 0.007 0.008 0.001 0.001 0.011 0.011 0.011 0.009 0.009 0.009	e08_2 0.000 0.000 0.007 0.008 0.007 0.008 0.007 0.008 0.011 0.011 0.011 0.011 0.009 0.009 0.009	e08_1	0.007 0.007 0.008 0.007 0.008 0.007 0.008 0.001 0.008 0.011 0.011 0.011 0.009 0.009	0.005 0.004 0.005 0.004 0.005 0.000 0.0005 0.008 0.009 0.008 0.0006 0.006	i07_1 0.007 0.008 0.007 0.009 0.010 0.010 0.010 0.007 0.007	17_Alpaca2	15_Cat2	15_Human2	12_A(paca 0.007 0.008 0.008 0.007 0.007 0.007	14_Cat2	0.009 0.009 0.009	10_Alpaca	0.001	0.001			15_A(paca		10_Rat	80_EP4		14_Cat1	
CPXV_MonKra08_4           CPXV_JagKre08_2           CPXV_JagKre08_1           CPXV_Ger2017_Vole           CPXV EleGri07_1           CPXV_Ger2017_Vole           CPXV_Ger2017_Vole           CPXV_Ger2017_Vole           CPXV_Ger2017_Alpaca2           CPXV_Ger2015_Cat2           CPXV_Ger2015_LHuman2           CPXV_Ger2012_Alpaca           CPXV_Ger2010_Alpaca           CPXV_Ger2010_Alpaca           CPXV_Ger2010_Alpaca           CPXV_HumMag07_1           CPXV_HumMed7_1           CPXV_Ama_2015	re08_4 0.000 0.000 0.000 0.007 0.007 0.007 0.007 0.008 0.008 0.001 0.011 0.011 0.011 0.001 0.009 0.00 0.0	e08_2 0.000 0.000 0.007 0.008 0.007 0.008 0.007 0.008 0.0011 0.011 0.011 0.011 0.009 0.009 0.009 0.009	e08_1 0.000 0.007 0.008 0.007 0.008 0.007 0.008 0.001 0.001 0.011 0.011 0.011 0.009 0.009 0.009 0.009	an08_1 0.007 0.008 0.007 0.008 0.007 0.008 0.001 0.001 0.011 0.011 0.011 0.009 0.009 0.009 0.009	0.005 0.004 0.005 0.004 0.005 0.006 0.006 0.006 0.006 0.006 0.006 0.006	i07_1 	17_Alpaca2	15_Cat2	15_Human2	2_A(paca 	14_C812	0.009 0.009 0.009 0.009 0.009	10_Alpaca	0.001 0.001 0.005	0.001	0.005		15_A(paca		10_Rat	80_EP4		14_Cat1	
CPXV_MonKra08_4           CPXV_JagKre08_2           CPXV_JagKre08_1           CPXV_HumLan08_1           CPXV_Ger2017_Vole           CPXV_Ger2017_Vole           CPXV_Ger2017_Vole           CPXV_Ger2017_Alpaca2           CPXV_Ger2015_Cat2           CPXV_Ger2015_Cat2           CPXV_Ger2012_Alpaca           CPXV_Ger2016_Racoon           CPXV_Ger2010_Racoon           CPXV_HumBag07_1           CPXV_HumBag07_1           CPXV_HumBag07_1           CPXV_Ag2015           CPXV_Ger2013_Alpaca	re08_4	eU8_2 0.000 0.000 0.007 0.008 0.007 0.008 0.007 0.008 0.011 0.011 0.011 0.009 0.009 0.009 0.009 0.009 0.010	e08_1 0.000 0.007 0.008 0.007 0.008 0.007 0.008 0.001 0.011 0.011 0.011 0.011 0.011 0.009 0.009 0.009 0.009 0.009 0.009 0.009	an08_1 0.007 0.008 0.007 0.008 0.007 0.008 0.011 0.011 0.011 0.011 0.009 0.009 0.009 0.009 0.009 0.009	0.005 0.004 0.005 0.004 0.005 0.008 0.009 0.008 0.006 0.006 0.006 0.006 0.006	007_1 0.007 0.008 0.007 0.009 0.010 0.000 0.010 0.007 0.007 0.007 0.007 0.007	17_Alpaca2	15_Cat2	0.003 0.007 0.007 0.000 0.008 0.008 0.008 0.008 0.008	2_Alpaca 0.007 0.008 0.007 0.008 0.007 0.007 0.007 0.007 0.007	14_C812	0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.010 0.01	10_Alpaca	0.001 0.001 0.005 0.005	0.001 0.005 0.005	0.005	0.008	13_A(paca		10_Rat	80_EP4		14_Cat1	
CPXV_MonKre08_4 CPXV_JagKre08_2 CPXV_JagKre08_1 CPXV_BagKre08_1 CPXV_Ger2017_Vole CPXV_Ger2017_Vole CPXV_Ger2017_Vole CPXV_Ger2015_Cat2 CPXV_Ger2015_Cat2 CPXV_Ger2015_Huma12 CPXV_Ger2014_Alpaca CPXV_Ger2014_Alpaca CPXV_Ger2014_Alpaca CPXV_HumMag07_1 CPXV_HumMag07_1 CPXV_HumMag07_1 CPXV_HumMag07_1 CPXV_HumMag07_1 CPXV_Ama_2015 CPXV_CatPot07_1 CPXV_Ger2013_Alpaca CPXV_CatPot07_1 CPXV_Ger2015_CPXV_Ger2015_CPXV_CatPot07_1 CPXV_Ger2015_CPXV_CatPot07_1 CPXV_GER205_CPXV_CatPot07_1 CPXV_GER205_CPXV_GER205_CPXV_CATPOT07_1 CPXV_GER205_CPXV_CATPOT07_1 CPXV_GER205_	re08_4	eU8_2 0.000 0.000 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.008 0.011 0.011 0.011 0.011 0.009 0.009 0.009 0.009 0.009 0.009 0.009	e08_1 0.000 0.007 0.008 0.007 0.008 0.007 0.008 0.011 0.011 0.011 0.011 0.009 0.009 0.009 0.009 0.009 0.009	an08_1 0.007 0.008 0.007 0.008 0.001 0.008 0.011 0.011 0.011 0.009 0.009 0.009 0.009 0.009 0.009 0.009	0.005 0.004 0.005 0.004 0.005 0.005 0.005 0.005 0.000 0.0008 0.0006 0.0006 0.0006 0.0006 0.0006	i07_1 0.007 0.008 0.007 0.009 0.010 0.010 0.007 0.007 0.007 0.007 0.007 0.007 0.008 0.007 0.008	17_Alpaca2	15_Cat2	15_Human2	0.007 0.007 0.008 0.007 0.008 0.007 0.007 0.007 0.007 0.007	14_Cat2	0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.000 0.010 0.010 0.009	0.009 0.009 0.009 0.009 0.009 0.009	0.001 0.001 0.005 0.005 0.001	0.001	0.005 0.005 0.001	0.008	13_A(paca		10_Rat	80_EP4		14_Cat1	
CPXV_MonKre08_4           CPXV_JagKre08_1           CPXV_JagKre08_1           CPXV_Ger2017_Vole           CPXV_Ger2017_Vole           CPXV_Ger2017_Vole           CPXV_Ger2017_Vole           CPXV_Ger2015_Cat2           CPXV_Ger2015_Human2           CPXV_Ger2015_Alpaca           CPXV_Ger2010_Alpaca           CPXV_Ger2010_Alpaca           CPXV_HumMag07_1           CPXV_Ber2015_Cat2           CPXV_Ger2010_Alpaca           CPXV_HumBer07_1           CPXV_Man_2015           CPXV_Ger2013_Alpaca           CPXV_HangArd_1           CPXV_HangArd_1           CPXV_Ger2013_Alpaca           CPXV_HangArd_1           CPXV_Ger2013_Alpaca           CPXV_Ger2013_Alpaca           CPXV_Ger2013_Alpaca           CPXV_Ger2013_Alpaca           CPXV_Ger2013_Alpaca           CPXV_Ger2013_Alpaca	re08_4 re08_4 0.000 0.000 0.000 0.007 0.007 0.007 0.007 0.008 0.001 0.001 0.001 0.011 0.011 0.011 0.011 0.011 0.011 0.009 0.009 0.009 0.009 0.009 0.009 0.010 0.009 0.012	eU8_2 0.000 0.000 0.007 0.007 0.007 0.008 0.008 0.008 0.008 0.011 0.011 0.011 0.011 0.009 0.002 0.009 0.002 0.009 0.002 0.	e08_1 0.000 0.007 0.007 0.007 0.008 0.008 0.008 0.008 0.011 0.011 0.011 0.011 0.009 0.	an08_1 0.007 0.008 0.007 0.008 0.007 0.008 0.008 0.008 0.008 0.0011 0.011 0.011 0.009 0.002 0.009 0.002 0.009 0.002	0.005 0.004 0.005 0.004 0.005 0.0005 0.0005 0.0005 0.0006 0.0006 0.0006 0.0006 0.0006 0.0006 0.0006 0.0007	i07_1 0.007 0.007 0.008 0.007 0.000 0.007 0.000 0.010 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.009 0.007 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.007 0.009 0.007 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.009 0.009 0.007 0.009 0.009 0.009 0.000 0.007 0.009 0.009 0.009 0.007 0.009 0.009 0.007 0.009 0.009 0.007 0.009 0.009 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.009 0.001 0.009 0.001 0.009 0.001 0.009 0.001 0.00	17_Alpaca2	15_Cat2	15_Human2	2_AIPAC3	14_Cat2	0.009 0.009 0.009 0.009 0.010 0.010 0.010	10_Alpaca 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009	0.001 0.001 0.005 0.005 0.005	0.001 0.005 0.005 0.005	0.005 0.001 0.009	0.008	1.5_A(paca	0.009	10_Rat	80_EP4		14_Cat1	
CPXV_MonKra08_4           CPXV_JagKre08_2           CPXV_JagKre08_1           CPXV_BunLar08_1           CPXV_Ber2017_Vole           CPXV_EleGri07_1           CPXV_Ger2017_Alpaca2           CPXV_Ger2015_Cat2           CPXV_Ger2015_Alpaca2           CPXV_Ger2012_Alpaca           CPXV_Ger2012_Alpaca           CPXV_Ger2013_Alpaca           CPXV_Ger2010_Racoon           CPXV_HumBag07_1           CPXV_Ber2013_Alpaca           CPXV_HumBag07_1           CPXV_Ger2013_Alpaca           CPXV_Ger2013_Alpaca           CPXV_Ger2013_Alpaca           CPXV_Ger2013_Alpaca           CPXV_Ger2013_Alpaca           CPXV_Ger2013_Alpaca           CPXV_Ger2013_Alpaca           CPXV_Ger2013_Alpaca           CPXV_Ger2013_Rat           CPXV_Ger1030_Rat           CPXV_Ger1030_EP4	re08_4	e08_2 0.000 0.000 0.007 0.007 0.008 0.007 0.008 0.001 0.008 0.011 0.009 0.001 0.	e08_1 0.000 0.007 0.007 0.008 0.007 0.008 0.007 0.008 0.007 0.008 0.001 0.011 0.011 0.011 0.009 0.009 0.009 0.009 0.009 0.010 0.009 0.011 0.009 0.011 0.009 0.009 0.011 0.009 0.011 0.009 0.011 0.009 0.009 0.011 0.009 0.009 0.011 0.009 0.009 0.009 0.011 0.009 0.011 0.011 0.011 0.011 0.011 0.009 0.009 0.010 0.011 0.	an08_1 0.007 0.008 0.007 0.008 0.007 0.008 0.007 0.008 0.001 0.011 0.011 0.009 0.009 0.009 0.009 0.009 0.009 0.001 0.009 0.001 0.009 0.009 0.001 0.009 0.001 0.009 0.001 0.009 0.001 0.009 0.009 0.001 0.009 0.010 0.011 0.009 0.010 0.011 0.011 0.011 0.011 0.011 0.009 0.011 0	0.005 0.004 0.005 0.004 0.005 0.008 0.008 0.008 0.006 0.006 0.006 0.007 0.008 0.006 0.007 0.008	i07_1 0.007 0.007 0.008 0.007 0.009 0.010 0.007 0.007 0.007 0.009 0.000 0.007 0.009 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.009 0.007 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.007 0.009 0.007 0.009 0.007 0.007 0.009 0.007 0.007 0.009 0.007 0.009 0.007 0.007 0.009 0.007 0.007 0.007 0.007 0.009 0.007 0.007 0.007 0.009 0.007 0.007 0.009 0.007 0.009 0.007 0.007 0.009 0.007 0.009 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.009 0.007 0.009 0.000 0.007 0.009 0.000 0.007 0.009 0.000 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.007 0.007 0.001 0.001 0.007 0.001 0.001 0.001 0.001 0.001 0.001 0.007 0.001 0.	17_Alpaca2	15_Cat2	15_Human2	2_AIPaCa 0.007 0.008 0.008 0.007 0.008 0.007 0.007 0.007 0.008 0.007 0.007 0.008 0.007 0.007 0.008 0.007 0.007 0.007 0.008 0.007 0.007 0.007 0.008 0.007 0.011	14_Cat2	0.009 0.009 0.009 0.009 0.010 0.010 0.010 0.010 0.010 0.009	0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009	0.001 0.001 0.005 0.005 0.009 0.009	0.001 0.005 0.005 0.001 0.009 0.010	0.005 0.005 0.001 0.009 0.009	0.008	13_A(paca	0.009	10_Rat			14_Cat1	
CPXV_MonKra08_4           CPXV_JagKre08_2           CPXV_JagKre08_1           CPXV_BumLan08_1           CPXV_Ber2017_Vole           CPXV_Ger2017_Vole           CPXV_Ger2017_Vole           CPXV_Ger2017_Vole           CPXV_Ger2017_Alpaca2           CPXV_Ger2015_Cat2           CPXV_Ger2015_Human2           CPXV_Ger2014_Cat2           CPXV_Ger2010_Racoon           CPXV_HumMag07_1           CPXV_HumMag07_1           CPXV_HumMag07_1           CPXV_Ger2013_Alpaca           CPXV_Ger2013_Cat2           CPXV_Ger2013_Cat3           CPXV_Ger2013_Cat4           CPXV_Ger2013_Cat4           CPXV_Ger2013_Raca           CPXV_Ger2013_Rat           CPXV_Ger2013_Rat           CPXV_Ger2013_Rat           CPXV_Ger2013_Rat           CPXV_Ger2013_Rat           CPXV_Ger2013_Rat	re08_4 re08_4 0.000 0.000 0.000 0.007 0.008 0.007 0.008 0.007 0.008 0.007 0.008 0.011 0.011 0.011 0.011 0.011 0.011 0.010 0.009 0.009 0.009 0.009 0.009 0.009 0.010 0.009 0.010 0.009 0.011 0.01	e08_2 0.000 0.000 0.007 0.008 0.007 0.008 0.007 0.008 0.011 0.011 0.011 0.011 0.009 0.001 0.	e08_1 0.000 0.007 0.008 0.007 0.008 0.007 0.008 0.001 0.011 0.011 0.011 0.011 0.009 0.0012	an08_1 0.007 0.008 0.007 0.008 0.007 0.008 0.001 0.008 0.011 0.011 0.011 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.0012 0.0012 0.011 0.011	0.005 0.004 0.005 0.004 0.005 0.005 0.005 0.008 0.006 0.006 0.006 0.006 0.006 0.006 0.006 0.006 0.0006 0.0006 0.0001 0.0005	i07_1 0.007 0.008 0.007 0.009 0.010 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.009 0.007 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.009 0.007 0.007 0.009 0.007 0.007 0.009 0.007 0.007 0.007 0.009 0.007 0.007 0.009 0.007 0.007 0.007 0.009 0.007 0.009 0.007 0.007 0.009 0.007 0.009 0.009 0.007 0.009 0.009 0.009 0.007 0.009 0.009 0.007 0.009 0.007 0.009 0.	17_Alpaca2	15_Cat2	15_Human2	2_Alpaca 0.007 0.007 0.008 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007	14_Cat2	0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.010 0.010 0.010 0.009 0.009	10_Alpaca 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.000 0.010	0.001 0.001 0.005 0.005 0.005 0.009 0.009 0.009	0.001 0.005 0.001 0.009 0.010 0.009	0.005 0.005 0.001 0.009 0.009 0.007	0.008 0.005 0.011 0.009	1.5_A(paca	0.009 0.007	10_Rat	80_EP4		14_Cat1	
CPXV_MonKred8_4           CPXV_JagKre08_2           CPXV_JagKre08_1           CPXV_Berz017_Vole           CPXV_Ger2017_Vole           CPXV_Ger2017_Vole           CPXV_Ger2017_Vole           CPXV_Ger2017_Vole           CPXV_Ger2017_Vole           CPXV_Ger2017_Vole           CPXV_Ger2015_Cat2           CPXV_Ger2015_Human2           CPXV_Ger2014_Alpaca           CPXV_Ger2010_Alpaca           CPXV_HumMag07_1           CPXV_BeaBer04_1           CPXV_Ger2013_Alpaca           CPXV_Ger2013_Alpaca           CPXV_Ger2013_Alpaca           CPXV_Ger2013_Alpaca           CPXV_Ger2013_Alpaca           CPXV_Ger2016_Rat           CPXV_Ger2016_Rat           CPXV_Ger2018_Alpaca           CPXV_Ger2018_Alpaca           CPXV_Ger2018_Rat           CPXV_Ger2018_Rat           CPXV_Ger2018_Rat           CPXV_Ger2016_Rat           CPXV_Ger2016_Rat           CPXV_Ger2016_Rat           CPXV_Ger2016_Rat	re08_4 re	e08_2 0.000 0.000 0.007 0.007 0.007 0.008 0.008 0.008 0.008 0.011 0.011 0.011 0.011 0.009 0.009 0.009 0.009 0.009 0.012 0.013 0.011 0.009	e08_1 0.000 0.007 0.007 0.007 0.008 0.008 0.008 0.011 0.011 0.011 0.011 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.000 0.009 0.009 0.000 0.009 0.0012 0.	an08_1 0.007 0.008 0.007 0.008 0.007 0.008 0.008 0.008 0.008 0.011 0.011 0.011 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.000 0.009 0.000 0.009 0.000 0.009 0.000 0.009 0.000 0.009 0.000 0.009 0.000 0.009 0.009 0.000 0.009 0.0012 0.001	0.005 0.004 0.005 0.004 0.005 0.008 0.009 0.008 0.006 0.006 0.006 0.006 0.006 0.006 0.006 0.007 0.008 0.000 0.000 0.000 0.000 0.000 0.000 0.001 0.001 0.005 0.001 0.005 0.001 0.005 0.004 0.005 0.005 0.004 0.005 0.005 0.004 0.005 0.005 0.004 0.005 0.006 0.005 0.006 0.005 0.006 0.005 0.006 0.005 0.006 0.005 0.006 0.006 0.005 0.006 0.005 0.006 0.005 0.006 0.005 0.006 0.007 0.005 0.006 0.007 0.005 0.006 0.007 0.006 0.007 0.006 0.007 0.006 0.007 0.006 0.007 0.006 0.007 0.006 0.007 0.006 0.007 0.006 0.007 0.006 0.007 0.006 0.007 0.006 0.007 0.006 0.007 0.006 0.007 0.006 0.007 0.006 0.007 0.006 0.007 0.006 0.006 0.007 0.006 0.007 0.006 0.007 0.006 0.007 0.006 0.007 0.006 0.007 0.006 0.007 0.006 0.007 0.006 0.007 0.006 0.007 0.006 0.007 0.006 0.007 0.006 0.007 0.006 0.007 0.006 0.007 0.006 0.007 0.006 0.006 0.007 0.006 0.006 0.007 0.006 0.007 0.006 0.007 0.006 0.007 0.006 0.00700000000	i07_1 0.007 0.007 0.008 0.007 0.009 0.010 0.010 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.009 0.007 0.	17_Alpaca2	15_Cat2	15_Human2 0.003 0.007 0.007 0.007 0.000 0.008 0.008 0.008 0.008 0.008 0.008 0.008 0.008 0.009 0.008 0.001 0.001 0.011 0.011 0.011	2_AIP2C3	14_Cat2	0.009 0.009 0.009 0.009 0.009 0.010 0.010 0.010 0.010 0.010 0.010 0.009 0.010 0.009	10_Alpaca 10_Alpaca 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.010 0.010 0.010	0.001 0.001 0.005 0.005 0.009 0.009 0.009 0.009	0.001 0.005 0.001 0.009 0.010 0.009 0.010 0.009	0.005 0.005 0.001 0.009 0.009 0.009 0.009	0.008 0.005 0.010 0.011 0.009 0.008	1.5_A(paca 	10/_1	10_Rat	80_EP4	02_MKY	14_Cat1	

**Table S16.** Genetic distances within CPXV-like 1 estimated by p-distances from the alignment of the conserved genes (A), 87 OPXV whole genomes (B), core genomes (C) and orthologous genes (D).
			-								С													
	CPXV_Hum Ber07_1	CPXV_CatPo t07_1	CPXV_Hum Mag07_1	CPXV_BeaB er04_1	CPXV_Ger20 13_Alpaca	CPXV_Ger20 10_Rat	CPXV_Ger19 80_EP4	CPXV_Ger20 02_MKY	CPXV_Ama_ 2015	CPXV_Ger20 14_Cat1	CPXV_EleGr i07_1	CPXV_Ger20 17_Vole	CPXV_Ger20 17_Alpaca2	CPXV_Ger20 15_Cat2	CPXV_Ger20 10_Alpaca	CPXV_Ger20 15_Human2	CPXV_Ger20 12_Alpaca	CPXV_Ger20 14_Cat2	CPXV_Ger20 10_Racoon	CPXV_Monk re08_4	CPXV_JagKr e08_1	CPXV_JagKr e08_2	CPXV_HumL an08_1	CPXV_Ge r_1971_E P1 -
CPXV HumBer07 1																								
CPXV_CatPot07_1	0.001																							-
CPXV HumMag07 1	0.001	0.001																						-
CPXV BeaBer04 1	0.001	0.001	0.001																					-
CPXV Ger2013 Alpaca	0.005	0.005	0.005	0.005																				-
CPXV Ger2010 Bat	0.009	0.009	0.009	0.009	0.007																			+
CPXV Ger1980 EP4	0.010	0.009	0.009	0.009	0.008	0.004																		-
CPXV Ger2002 MKY	0.008	0.007	0.007	0.007	0.004	0.005	0.006																	-
CPXV Ama 2015	0.005	0.005	0.004	0.005	0.008	0.010	0.010	0.009																
CPXV Ger2014 Cat1	0.007	0.006	0.006	0.006	0.007	0.009	0.009	0.007	0.008															
CPXV EleGri07 1	0.007	0.007	0.007	0.007	0.008	0.011	0.012	0.009	0.008	0.007														-
CPXV Ger2017 Vole	0.006	0.006	0.006	0.006	0.008	0.010	0.011	0.009	0.006	0.006	0.005													-
CPXV Ger2017 Alpaca2	0.007	0.007	0.007	0.007	0.008	0.011	0.011	0.010	0.006	0.008	0.007	0.004												-
CPXV Ger2015 Cat2	0.008	0.008	0.007	0.008	0.009	0.011	0.012	0.010	0.007	0.008	0.008	0.005	0.004											-
CPXV Ger2010 Alpaca	0.009	0.009	0.009	0.009	0.009	0.010	0.009	0.010	0.009	0.010	0.010	0.008	0.008	0.010										-
CPXV Ger2015 Human2	0.008	0.008	0.008	0.008	0.009	0.011	0.011	0.010	0.008	0.008	0.007	0.006	0.006	0.007	0.009									-
CPXV Ger2012 Alpaca	0.007	0.007	0.007	0.007	0.008	0.011	0.011	0.009	0.007	0.007	0.007	0.005	0.005	0.006	0.008	0.003								-
CPXV Ger2014 Cat2	0.009	0.009	0.009	0.009	0.010	0.010	0.010	0.009	0.009	0.009	0.009	0.008	0.007	0.008	0.010	0.007	0.007							-
CPXV Ger2010 Bacoon	0.009	0.009	0.009	0.009	0.010	0.010	0.009	0.009	0.009	0.009	0.010	0.009	0.009	0.010	0.009	0.007	0.008	0.007						-
CPXV_MonKre08_4	0.009	0.009	0.009	0.009	0.010	0.012	0.013	0.011	0.009	0.009	0.008	0.007	0.007	0.006	0.011	0.008	0.008	0.011	0.010					-
CPXV JagKre08 1	0.009	0.009	0.009	0.009	0.010	0.012	0.013	0.011	0.009	0.009	0.008	0.007	0.007	0.006	0.011	0.008	0.008	0.011	0.010	0.000				-
CPXV JagKre08 2	0.009	0.009	0.009	0.009	0.010	0.012	0.013	0.011	0.009	0.009	0.008	0.007	0.007	0.006	0.011	0.008	0.008	0.011	0.010	0.000	0.000			-
CPXV HumLan08 1	0.009	0.009	0.009	0.009	0.010	0.012	0.013	0.011	0.009	0.009	0.008	0.007	0.007	0.006	0.011	0.008	0.008	0.011	0.010	0.000	0.000	0.000		-
CDVV Cor 1071 ED1	0.000	0.009	0.000	0.000	0.010	0.012	0.012	0.010	0.010	0.010	0.009	0.000	0.000	0.010	0.011	0.000	0.010	0.011	0.010	0.011	0.011	0.011	0.011	1
CLVA GEI 12/1 ELT -	0.005	0.005	0.009	0.009	0.010	0.012	0.012	0.010	0.010	0.010	0.005	0.005	0.005	0.010	0.011	0.005	0.010	0.011	0.010	0.011	0.011	0.011	0.011	
CPXV_Ger_1971_EP1	0.005	0.005	0.009	0.009	0.010	0.012	0.012	0.010	0.010	0.010	D	0.005	0.005	0.010	0.011	0.005	0.010	0.011	0.010	0.011	0.011	0.011	0.011	4
	0.003	0.005	0.009	0.009	0.010	0.012	0.012	0.010	0.010	0.010	D	0.005	0.003	0.010	0.011	0.005	0.010	0.011	0.010	0.011	0.011	0.011	0.011	CPXV Hu
	CPXV_EleGr	CPXV_Ger19	CPXV_Ger20	CPXV_Ger19	CPXV_Ger20	CPXV_Ger20	CPXV_Ger20	CPXV_Ger20	CPXV_HumL	CPXV_JagKr	D CPXV_JagKr	CPXV_MonK	CPXV_Ama_	CPXV_Ger20	CPXV_Ger20	CPXV_Ger20	CPXV_Ger20	CPXV_Ger20	CPXV_Ger20	CPXV_BeaB	CPXV_CatPo	CPXV_Ger20	CPXV_Hum	CPXV_Hu
	CPXV_EleGr i07_1	CPXV_Ger19 80_EP4	CPXV_Ger20 02_MKY	CPXV_Ger19 71_EP1	CPXV_Ger20 10_Raccoon	CPXV_Ger20 10_Rat	CPXV_Ger20 14_Cat1	CPXV_Ger20 15_Human2	CPXV_HumL an08_1	CPXV_JagKr e08_1	D CPXV_JagKr e08_2	CPXV_MonK re08_4	CPXV_Ama_ 2015	CPXV_Ger20 10_Alpaca	CPXV_Ger20 12_Alpaca	CPXV_Ger20 14_Cat2	CPXV_Ger20 15_Cat2	CPXV_Ger20 17_Alpaca2	CPXV_Ger20 17_Vole	CPXV_BeaB er04_1	CPXV_CatPo t07_1	CPXV_Ger20 13_Alpaca	CPXV_Hum Ber07_1	CPXV_Hu mMag07_ 1
CPXV_Get_19/1_CP1	CPXV_EleGr i07_1	CPXV_Ger19 80_EP4	CPXV_Ger20 02_MKY	CPXV_Ger19 71_EP1	CPXV_Ger20 10_Raccoon	CPXV_Ger20 10_Rat	0.012 CPXV_Ger20 14_Cat1	CPXV_Ger20 15_Human2	CPXV_HumL an08_1	CPXV_JagKr e08_1	D CPXV_JagKr e08_2	CPXV_MonK re08_4	CPXV_Ama_ 2015	CPXV_Ger20 10_Alpaca	CPXV_Ger20 12_Alpaca	CPXV_Ger20 14_Cat2	CPXV_Ger20 15_Cat2	CPXV_Ger20 17_Alpaca2	CPXV_Ger20 17_Vole	CPXV_BeaB er04_1	CPXV_CatPo t07_1	CPXV_Ger20 13_Alpaca	CPXV_Hum Ber07_1	CPXV_Hu mMag07_ 1
CPXV_EleGri07_1 CPXV_EleGri07_1	CPXV_EleGr i07_1	CPXV_Ger19 80_EP4	CPXV_Ger20 02_MKY	CPXV_Ger19 71_EP1	CPXV_Ger20 10_Raccoon	CPXV_Ger20 10_Rat	CPXV_Ger20 14_Cat1	CPXV_Ger20 15_Human2	CPXV_HumL an08_1	CPXV_JagKr e08_1	D CPXV_JagKr e08_2	CPXV_MonK re08_4	CPXV_Ama_ 2015	CPXV_Ger2C 10_Alpaca	CPXV_Ger20 12_Alpaca	CPXV_Ger20 14_Cat2	CPXV_Ger20 15_Cat2	CPXV_Ger20 17_Alpaca2	CPXV_Ger20 17_Vole	CPXV_BeaB er04_1	CPXV_CatPo t07_1	CPXV_Ger20 13_Alpaca	CPXV_Hum Ber07_1	CPXV_Hu mMag07_ 1
CPXV_EleGn07_1 CPXV_EleGn07_1 CPXV_Ger1980_EP4 CPXV_Ger2020_MKY	CPXV_EleGr i07_1 0.012 0.009	CPXV_Ger19 80_EP4	CPXV_Ger20 02_MKY	CPXV_Ger19 71_EP1	CPXV_Ger20 10_Raccoon	CPXV_Ger20 10_Rat	CPXV_Ger20 14_Cat1	CPXV_Ger20 15_Human2	CPXV_HumL an08_1	CPXV_JagKr e08_1	D CPXV_JagKr e08_2	CPXV_MonK re08_4	CPXV_Ama_ 2015	CPXV_Ger2C 10_Alpaca	CPXV_Ger20 12_Alpaca	CPXV_Ger20 14_Cat2	CPXV_Ger20 15_Cat2	CPXV_Ger2C 17_Alpaca2	CPXV_Ger20 17_Vole	CPXV_BeaB er04_1	CPXV_CatPo	CPXV_Ger20 13_Alpaca	CPXV_Hum Ber07_1	CPXV_Hu mMag07_ 1
CPXV_EleGri07_1 CPXV_EleGri07_1 CPXV_Ger1980_EP4 CPXV_Ger2002_MKY CPXV Ger2071_EP1	CPXV_EleGr i07_1 0.012 0.009 0.009	CPXV_Ger19 80_EP4	CPXV_Ger20 02_MKY	CPXV_Ger19 71_EP1	CPXV_Ger20 10_Raccoon	CPXV_Ger20 10_Rat	CPXV_Ger20 14_Cat1	CPXV_Ger20 15_Human2	CPXV_HumL an08_1	CPXV_JagKr e08_1	D CPXV_JagKr e08_2	CPXV_MonK re08_4	CPXV_Ama_ 2015	CPXV_Ger2C 10_Alpaca	CPXV_Ger2C 12_Alpaca	0 CPXV_Ger20 14_Cat2	CPXV_Ger20 15_Cat2	CPXV_Ger2C 17_Alpaca2	CPXV_Ger20 17_Vole	CPXV_BeaB er04_1	CPXV_CatPo	CPXV_Ger20 13_Alpaca	CPXV_Hum Ber07_1	CPXV_Hu mMag07_ 1
CPXV_EleGn07_1 CPXV_Ger1980_EP4 CPXV_Ger1980_EP4 CPXV_Ger1971_EP1 CPXV_Ger2010_Raccon	CPXV_EleGr i07_1 0.012 0.009 0.009	CPXV_Ger19 80_EP4 0.006 0.012 0.010	CPXV_Ger20 02_MKY 0.011 0.009	CPXV_Ger19 71_EP1	CPXV_Ger20 10_Raccoon	CPXV_Ger20 10_Rat	CPXV_Ger20 14_Cat1	CPXV_Ger20 15_Human2	CPXV_HumL an08_1	CPXV_JagKr e08_1	D CPXV_JagKr e08_2	CPXV_MonK re08_4	CPXV_Ama_ 2015	CPXV_Ger2C 10_Alpaca	CPXV_Ger20 12_Alpaca	CPXV_Ger20 14_Cat2	CPXV_Ger20 15_Cat2	CPXV_Ger2C 17_Alpaca2	CPXV_Ger20 17_Vole	CPXV_BeaB er04_1	CPXV_CatPo t07_1	CPXV_Ger20 13_Alpaca	CPXV_Hum Ber07_1	CPXV_Hu mMag07_ 1
CPXV_EleGn07_1 CPXV_EleGn07_1 CPXV_Ger1980_EP4 CPXV_Ger1970_EP1 CPXV_Ger2010_Raccoon CPXV_Ger2010_Rat	CPXV_EleGr i07_1 0.012 0.009 0.009 0.010 0.011	CPXV_Ger19 80_EP4 0.006 0.012 0.010 0.004	CPXV_Ger20 02_MKY 0.011 0.009 0.005	CPXV_Ger19 71_EP1 0.011 0.012	CPXV_Ger20 10_Raccoon	CPXV_Ger20 10_Rat	CPXV_Ger20 14_Cat1	CPXV_Ger20 15_Human2	CPXV_HumL an08_1	CPXV_JagKr e08_1	D CPXV_JagKr e08_2	CPXV_MonK re08_4	CPXV_Ama_ 2015	CPXV_Ger2C 10_Alpaca	CPXV_Ger2C 12_Alpaca	CPXV_Ger20 14_Cat2	CPXV_Ger20 15_Cat2	CPXV_Ger2C 17_Alpaca2	CPXV_Ger20 17_Vole	CPXV_BeaB er04_1	CPXV_CatPo t07_1	CPXV_Ger20 13_Alpaca	CPXV_Hum Ber07_1	CPXV_Hu mMag07_ 1
CPXV_EleGri07_1 CPXV_EleGri07_1 CPXV_Ger1980_EP4 CPXV_Ger1991_EP1 CPXV_Ger1971_EP1 CPXV_Ger2010_Ratcoon CPXV_Ger2014_Cat1	CPXV_EleGr i07_1 0.012 0.009 0.009 0.010 0.011 0.007	CPXV_Ger19 80_EP4 0.006 0.012 0.004 0.004	CPXV_Ger20 02_MKY 0.011 0.009 0.005 0.007	CPXV_Ger19 71_EP1 0.011 0.012 0.010	CPXV_Ger20 10_Raccoon 0.010 0.010	CPXV_Ger20 10_Rat	CPXV_Ger20 14_Cat1	CPXV_Ger20 15_Human2	CPXV_HumL an08_1	CPXV_JagKr e08_1	D CPXV_JagKr e08_2	CPXV_MonK re08_4	CPXV_Ama_ 2015	CPXV_Ger2C 10_Alpaca	CPXV_Ger20 12_Alpaca	CPXV_Ger20 14_Cat2	CPXV_Ger20 15_Cat2	CPXV_Ger2C 17_Alpaca2	CPXV_Ger20 17_Vole	CPXV_BeaB er04_1	CPXV_CatPo t07_1	CPXV_Ger20 13_Alpaca	CPXV_Hum Ber07_1	CPXV_Hu mMag07_ 1
CPXV_EleGn07_1 CPXV_Ger1980_EP4 CPXV_Ger1980_EP4 CPXV_Ger2002_MKY CPXV_Ger2010_Raccoon CPXV_Ger2010_Rat CPXV_Ger2011_Rat CPXV_Ger2015_Human2	CPXV_EleGr i07_1 0.012 0.009 0.009 0.010 0.011 0.007 0.007	CPXV_Ger19 80_EP4 0.006 0.012 0.010 0.004 0.009 0.010	CPXV_Ger20 02_MKY 0.011 0.009 0.005 0.007 0.009	CPXV_Ger19 71_EP1 0.011 0.012 0.010 0.010	CPXV_Ger20 10_Raccoon 0.010 0.010 0.007	CPXV_Ger20 10_Rat 0.009 0.011	0.012 CPXV_Ger20 14_Cat1	CPXV_Ger20 15_Human2	CPXV_HumL an08_1	CPXV_JagKr e08_1	D CPXV_JagKr e08_2	CPXV_MonK re08_4	CPXV_Ama_ 2015	CPXV_Ger20 10_Alpaca	CPXV_Ger20 12_Alpaca	CPXV_Ger20 14_Cat2	CPXV_Ger20 15_Cat2	CPXV_Ger20 17_Alpaca2	CPXV_Ger20 17_Vole	CPXV_BeaB er04_1	CPXV_CatPo t07_1	CPXV_Ger20 13_Alpaca	CPXV_Hum Ber07_1	CPXV_Hu mMag07_ 1
CPXV_EleGn07_1 CPXV_Ger1980_EP4 CPXV_Ger1980_EP4 CPXV_Ger1971_EP1 CPXV_Ger1971_EP1 CPXV_Ger2010_Raccoon CPXV_Ger2010_Rat CPXV_Ger2010_Rat CPXV_Ger2015_Human2 CPXV_Human80_1	CPXV_EleGr i07_1 0.012 0.009 0.010 0.011 0.007 0.007 0.007	CPXV_Ger19 80_EP4 0.006 0.012 0.010 0.004 0.009 0.010 0.012	CPXV_Ger20 02_MKY 0.011 0.009 0.005 0.007 0.009 0.011	CPXV_Ger19 71_EP1 0.011 0.012 0.010 0.010 0.011	CPXV_Ger20 10_Raccoon 0.010 0.010 0.007 0.010	CPXV_Ger20 10_Rat 0.009 0.011 0.012	0.012 CPXV_Ger20 14_Cat1 0.008 0.009	0.010 CPXV_Ger20 15_Human2	CPXV_HumL an08_1	CPXV_JagKr e08_1	D CPXV_lagkr e08_2	CPXV_MonK re08_4	CPXV_Ama_ 2015	CPXV_Ger2( 10_Alpaca	CPXV_Ger20 12_Alpaca	CPXV_Ger20 14_Cat2	CPXV_Ger20 15_Cat2	CPXV_Ger2U 17_Alpaca2	CPXV_Ger20 17_Vole	CPXV_BeaB er04_1	CPXV_CatPo t07_1	CPXV_Ger20 13_Alpaca	CPXV_Hum Ber07_1	CPXV_Hu mMag07_ 1
CPXV_EleGn07_1 (PXV_Ger1980_EP4 (PXV_Ger1980_EP4 (PXV_Ger2002_MKY (PXV_Ger2010_Raccoon (PXV_Ger2010_Rat (PXV_Ger2010_Rat (PXV_Ger2013_Human2 (PXV_Humlan08_1 (PXV_Ger2014_Cat1	CPXV_EleGr i07_1 0.012 0.009 0.009 0.010 0.011 0.007 0.007 0.008 0.008	CPXV_Ger19 80_EP4 0.006 0.012 0.010 0.004 0.009 0.010 0.012 0.012	CPXV_Ger20 02_MKY 0.011 0.009 0.005 0.007 0.007 0.011	CPXV_Ger19 71_EP1 0.011 0.012 0.010 0.010 0.011 0.011	CPXV_Ger20 10_Raccoon 0.010 0.010 0.010 0.010 0.010	CPXV_Ger20 10_Rat 0.009 0.011 0.012	CPXV_Ger20 14_Cat1 0.008 0.009 0.009	CPXV_Ger20 15_Human2	CPXV_HumL an08_1	CPXV_JagKr e08_1	D CPXV_JagKr e08_2	CPXV_MonK re08_4	CPXV_Ama_ 2015	CPXV_Ger2C 10_Alpaca	CPXV_Ger20 12_Alpaca	CPXV_Ger20 14_Cat2	CPXV_Ger20 15_Cat2	CPXV_Ger2C 17_Alpaca2	CPXV_Ger20 17_Vole	CPXV_BeaB er04_1	CPXV_CatPo t07_1	CPXV_Ger20 13_Alpaca	CPXV_Hum Ber07_1	CPXV_Hu mMag07_ 1
CPXV_EleGri07_1 CPXV_EleGri07_1 CPXV_Ger1980_EP4 CPXV_Ger1997_EP1 CPXV_Ger1977_EP1 CPXV_Ger2010_Rat CPXV_Ger2014_Cat1 CPXV_Ger2014_Cat1 CPXV_Ger2015_Human2 CPXV_JagKre08_1 CPXV_JagKre08_2	CPXV_EleGr i07_1 0.012 0.009 0.009 0.010 0.011 0.007 0.007 0.008 0.008 0.008	CPXV_Ger19 80_EP4 0.0006 0.012 0.010 0.004 0.009 0.010 0.012 0.012 0.012	CPXV_Ger20 02_MKY 0.011 0.009 0.005 0.007 0.009 0.011 0.011 0.011	0.009 CPXV_Ger19 71_EP1 0.011 0.012 0.010 0.010 0.011 0.011	CPXV_Ger20 10_Raccoon 0.010 0.010 0.010 0.007 0.010 0.010 0.010	CPXV_Ger20 10_Rat 0.009 0.011 0.012 0.012	CPXV_Ger20 14_Cat1 0.008 0.009 0.009	CPXV_Ger20 15_Human2	CPXV_HumL an08_1	CPXV_JagKr e08_1	D CPXV_lagKr e08_2	CPXV_MonK re08_4	CPXV_Ama_ 2015	CPXV_Ger2C 10_Alpaca	CPXV_Ger2C 12_Alpaca	CPXV_Ger20 14_Cat2	CPXV_Ger20 15_Cat2	CPXV_Ger2C 17_Alpaca2	CPXV_Ger20 17_Vole	CPXV_BeaB er04_1	CPXV_CatPo t07_1	CPXV_Ger20 13_Alpaca	CPXV_Hum Ber07_1	CPXV_Hu mMag07_ 1
CPXV_EleGri07_1 CPXV_EleGri07_1 CPXV_Ger1980_EP4 CPXV_Ger1980_EP4 CPXV_Ger2010_Raccoon CPXV_Ger2010_Rat CPXV_Ger2010_Rat CPXV_Ger2011_Rat CPXV_Ger2015_Human2 CPXV_HumLan08_1 CPXV_JagKre08_1 CPXV_JagKre08_2 CPXV_Monkre08_4	CPXV_EleGr i07_1 0.012 0.009 0.009 0.010 0.011 0.007 0.008 0.008 0.008	CPXV_Ger19 80_EP4 0.006 0.012 0.010 0.004 0.009 0.010 0.012 0.012 0.012 0.012	CPXV_Ger20 02_MKY 0.011 0.009 0.005 0.007 0.009 0.011 0.011 0.011	CPXV_Ger19 71_EP1 0.011 0.012 0.010 0.011 0.011 0.011 0.011	CPXV_Ger20 10_Raccoon 0.010 0.010 0.010 0.010 0.010 0.010 0.010	CPXV_Ger20 10_Rat 0.009 0.011 0.012 0.012 0.012	CPXV_Ger20 14_Cat1 0.008 0.009 0.009 0.009	CPXV_Ger20 15_Human2 0.007 0.007 0.007	CPXV_HumL an08_1	CPXV_JagKr e08_1	0.000	CPXV_MonK re08_4	CPXV_Ama_ 2015	CPXV_Ger2C 10_Alpaca	CPXV_Ger2C 12_Alpaca	CPXV_Ger20 14_Cat2	CPXV_Ger20 15_Cat2	CPXV_Ger2C 17_Alpaca2	CPXV_Ger20 17_Vole	CPXV_BeaB er04_1	CPXV_CatPo t07_1	CPXV_Ger20 13_Alpaca	CPXV_Hum Ber07_1	CPXV_Hu mMag07_ 1
CPXV_EleGn07_1 CPXV_Ger1980_EP4 CPXV_Ger1980_EP4 CPXV_Ger1971_EP1 CPXV_Ger1971_EP1 CPXV_Ger2010_Ratcoon CPXV_Ger2010_Rat CPXV_Ger2010_Rat CPXV_Ger2015_Human2 CPXV_JagKre08_1 CPXV_JagKre08_2 CPXV_MonKre08_4 CPXV_MonKre08_4 CPXV_MonKre08_4 CPXV_MonKre08_4 CPXV_MonKre08_4 CPXV_MonKre08_4 CPXV_MONKre08_4 CPXV_MONKre08_4 CPXV_MONKre08_4 CPXV_MONKre08_4 CPXV_MONKre08_4 CPXV_MONKRE04 CPXV_MONKRE04 CPXV_MONKRE04 CPXV_MONKRE04	CPXV_EleGr i07_1 0.012 0.009 0.010 0.011 0.007 0.008 0.008 0.008 0.008 0.008	CPXV_Ger19 80_EP4 0.006 0.012 0.010 0.004 0.009 0.010 0.012 0.012 0.012 0.012 0.012 0.012	CPXV_Ger20 02_MKY 0.011 0.009 0.005 0.007 0.009 0.011 0.011 0.011 0.011	CPXV_Ger19 71_EP1 0.011 0.012 0.010 0.010 0.011 0.011 0.011 0.011	CPXV_Ger20 10_Raccoon 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010	CPXV_Ger20 10_Rat 0.009 0.011 0.012 0.012 0.012 0.012	CPXV_Ger20 14_Cat1 0.008 0.009 0.009 0.009 0.009	CPXV_Ger20 15_Human2 0.007 0.007 0.007 0.007 0.007	CPXV_HumL an08_1 0.000 0.000 0.000 0.000	CPXV_lagKr e08_1	D D CPXV_lagKr e08_2	CPXV_MonK re08_4	CPXV_Ama_ 2015	CPXV_Ger2C 10_Alpaca	CPXV_Ger2C 12_Alpaca	CPXV_Ger20 14_Cat2	CPXV_Ger20 15_Cat2	CPXV_Ger2C 17_Alpaca2	CPXV_Ger20 17_Vole	CPXV_BeaB er04_1	CPXV_catPo t07_1	CPXV_Ger20 13_Alpaca	CPXV_Hum Ber07_1	CPXV_Hu mMag07_ 1
CPXV_EleGn07_1 (PXV_Ger1980_EP4 (PXV_Ger1980_EP4 (PXV_Ger2002_MKY (PXV_Ger2010_Ratcoon (PXV_Ger2010_Rat (PXV_Ger2011_Human2 (PXV_Ger2015_Human2 (PXV_JagKre08_1 (PXV_JagKre08_1 (PXV_JagKre08_2 (PXV_JagKre08_2 (PXV_JagKre08_2 (PXV_JagKre08_2 (PXV_JagKre08_2 (PXV_JagKre08_2 (PXV_JagKre08_2 (PXV_JagKre08_2 (PXV_JagKre08_2 (PXV_JagKre08_2 (PXV_JAGKRE08_2 (PXV_JA	CPXV_EleGr i07_1 0.012 0.009 0.010 0.011 0.007 0.007 0.008 0.008 0.008 0.008 0.008 0.008	CPXV_Ger19 80_EP4 0.006 0.012 0.010 0.004 0.009 0.010 0.012 0.012 0.012 0.012 0.012 0.012 0.012	CPXV_Ger20 02_MKY 0.011 0.009 0.005 0.007 0.009 0.011 0.011 0.011 0.011 0.011	CPXV_Ger19 71_EP1 0.011 0.012 0.010 0.011 0.011 0.011 0.011 0.011	CPXV_Ger20 10_Raccoon 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010	CPXV_Ger20 10_Rat 0.009 0.011 0.012 0.012 0.012 0.012 0.010 0.010	CPXV_Ger20 14_Cat1 0.008 0.009 0.009 0.009 0.009 0.009	CPXV_Ger20 15_Human2 0.007 0.007 0.007 0.007 0.007 0.007	CPXV_HumL an08_1 0.000 0.000 0.000 0.000 0.000 0.000	CPXV_JagKr e08_1	D D CPXV_lagKr e08_2 	CPXV_Monk re08_4	CPXV_Ama_ 2015	CPXV_Ger2C 10_Alpaca	CPXV_Ger20 12_Alpaca	CPXV_Ger20 14_Cat2	CPXV_Ger20 15_Cat2	CPXV_Ger2C 17_Alpaca2	CPXV_Ger20 17_Vole	CPXV_BeaB er04_1	CPXV_catPo t07_1	CPXV_Ger20 13_Alpaca	CPXV_Hum Ber07_1	CPXV_Hu mMag07_1
CPXV_EleGn07_1 CPXV_EleGn07_1 CPXV_Ger1980_EP4 CPXV_Ger1980_EP4 CPXV_Ger2010_Rat CPXV_Ger2010_Rat CPXV_Ger2010_Rat CPXV_Ger2015_Human2 CPXV_JagKre08_1 CPXV_JagKre08_1 CPXV_JagKre08_4 CPXV_MonKre08_4 CPXV_Ger2012_Alpaca CPXV_Ger2012_Alpaca	CPXV_EleGr i07_1 0.012 0.009 0.009 0.010 0.011 0.001 0.001 0.000 0.008 0.008 0.008 0.008 0.008 0.008 0.000	CPXV_Ger19 80_EP4 0.006 0.012 0.010 0.009 0.010 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.010	CPXV_Ger20 02_MKY 0.011 0.009 0.005 0.007 0.009 0.011 0.011 0.011 0.011 0.011 0.009 0.009 0.009	CPXV_Ger19 71_EP1 0.011 0.012 0.010 0.011 0.011 0.011 0.011 0.011 0.011 0.011	CPXV_Ger20 10_Raccoon 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.009 0.008	CPXV_Ger20 10_Rat 0.009 0.011 0.012 0.012 0.012 0.012 0.012 0.010 0.010	0.002 CPXV_Ger20 14_Cat1 0.008 0.009 0.009 0.009 0.009 0.009 0.009 0.009	CPXV_Ger20 15_Human2 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007	CPXV_HumL an08_1 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	CPXV_JagKr e08_1	D D CPXV_JagKr e08_2 	CPXV_Monk re08_4	CPXV_Ama_ 2015	CPXV_Ger2C 10_Alpaca	CPXV_Ger2C 12_Alpaca	CPXV_Ger20 14_Cat2	CPXV_Ger20 15_Cat2	CPXV_Ger2C 17_Alpaca2	CPXV_Ger20 17_Vole	CPXV_BeaB er04_1	CPXV_CatPo t07_1	CPXV_Ger20 13_Alpaca	CPXV_Hum Ber07_1	CPXV_Hu mMag07_ 1
CPXV_EleGri07_1 CPXV_EleGri07_1 CPXV_Ger1980_EP4 CPXV_Ger1997_EP1 CPXV_Ger1971_EP1 CPXV_Ger2010_Rat CPXV_Ger2011_Rat CPXV_Ger2014_Cat1 CPXV_Ger2014_Cat1 CPXV_JagKre08_1 CPXV_JagKre08_1 CPXV_JagKre08_2 CPXV_Monkre08_4 CPXV_Ama_2015 CPXV_Ger2012_Alpaca CPXV_Ger2014_Cat2	CPXV_EleGr i07_1 0.012 0.009 0.009 0.010 0.011 0.001 0.001 0.008 0.008 0.008 0.008 0.008 0.008 0.008 0.008 0.009	CPXV_Ger19 80_EP4 0.006 0.012 0.010 0.009 0.010 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.010 0.009 0.010 0.000	CPXV_Ger20 02_MKY 0.011 0.009 0.005 0.007 0.009 0.011 0.011 0.011 0.011 0.011 0.009 0.009 0.009 0.009	CPXV_Ger19 71_EP1 0.011 0.012 0.010 0.010 0.011 0.011 0.011 0.011 0.011 0.011 0.011 0.010 0.011	CPXV_Ger20 10_Raccoon 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.000 0.008 0.008	CPXV_Ger20 10_Rat 0.009 0.011 0.012 0.012 0.012 0.012 0.012 0.010 0.010 0.010	CPXV_Ger20 14_Cat1 0.008 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009	CPXV_Ger20 15_Human2 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007	CPXV_HumL an08_1 	CPXV_JagKr e08_1	D D CPXV_JagKr e08_2 	CPXV_Monk re08_4	CPXV_Ama_ 2015	CPXV_Ger2C 10_Alpaca	CPXV_Ger20 12_Alpaca	CPXV_Ger20 14_Cat2	CPXV_Ger20 15_Cat2	CPXV_Ger2C 17_Alpaca2	CPXV_Ger20 17_Vole	CPXV_BeaB er04_1	CPXV_CatPo t07_1	CPXV_Ger20 13_Alpaca	CPXV_Hum Ber07_1	CPXV_Hu mMag07_ 1
CPXV_EleGn07_1 CPXV_EleGn07_1 CPXV_Ger1980_EP4 (PXV_Ger2002_MKY CPXV_Ger2010_Raccon CPXV_Ger2010_Rat (PXV_Ger2010_Rat CPXV_Ger2014_Cat1 CPXV_Ger2015_Human2 CPXV_JagKre08_1 CPXV_JagKre08_1 CPXV_JagKre08_4 CPXV_Ger2010_Alpaca CPXV_Ger2010_Alpaca CPXV_Ger2012_Alpaca CPXV_Ger2015_Cat2 CPXV_Ger2015	CPXV_EleGr i07_1 0.012 0.009 0.000 0.011 0.011 0.007 0.008 0.008 0.008 0.008 0.008 0.008 0.008 0.008 0.008 0.009 0.000 0.000	CPXV_Ger19 80_EP4 0.006 0.012 0.010 0.004 0.010 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.010 0.009 0.010 0.000	CPXV_Ger20 02_MKY 0.011 0.009 0.005 0.007 0.009 0.011 0.011 0.011 0.011 0.009 0.009 0.009 0.009 0.009 0.009	CPXV_Ger19 71_EP1 0.011 0.012 0.010 0.011 0.011 0.011 0.011 0.011 0.011 0.010 0.011 0.010 0.011 0.010	CPXV_Ger20 10_Raccoon 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.000 0.000 0.008 0.008 0.008	CPXV_Ger20 10_Rat 0.009 0.011 0.012 0.012 0.012 0.012 0.010 0.010 0.010 0.010	CPXV_Ger20 14_Cat1 0.008 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009	CPXV_Ger20 15_Human2 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007	CPXV_HumL an08_1 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	CPXV_JagKr e08_1	D D CPXV_JagKr e08_2	CPXV_Monk re08_4	CPXV_Ama_ 2015	CPXV_Ger2C 10_Alpaca	CPXV_Ger20 12_Alpaca	0.005	CPXV_Ger20 15_Cat2	CPXV_Ger2C 17_Alpaca2	CPXV_Ger20 17_Vole	CPXV_BeaB er04_1	CPXV_CatPo t07_1	CPXV_Ger20 13_Alpaca	CPXV_Hum Ber07_1	CPXV_Hu mMag07_1 1
CPXV_EleGn07_1 (PXV_Ger1980_EP4 (PXV_Ger1980_EP4 (PXV_Ger2002_MKY (PXV_Ger2010_Raccoon (PXV_Ger2010_Rat (PXV_Ger2011_Kuman2 (PXV_Ger2015_Human2 (PXV_JagKre08_1 (PXV_JagKre08_1 (PXV_JagKre08_2 (PXV_JagKre08_2 (PXV_JagKre08_2 (PXV_JagKre08_2 (PXV_JagKre08_2 (PXV_Ger2012_Alpaca (PXV_Ger2012_Alpaca (PXV_Ger2012_Alpaca (PXV_Ger2017_Alpaca2 (PXV_Ger2017_Alpac	CPXV_EleGr i07_1 0.012 0.009 0.000 0.011 0.007 0.000 0.000 0.008 0.008 0.008 0.008 0.008 0.008 0.000 0.000 0.000 0.000 0.000 0.009 0.0000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.000000	CPXV_Ger19 80_EP4 0.006 0.012 0.004 0.009 0.010 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.010 0.009 0.010 0.010 0.010 0.012 0.011	CPXV_Ger20 02_MKY 0.011 0.009 0.005 0.007 0.009 0.011 0.011 0.011 0.011 0.011 0.011 0.009 0.009 0.009 0.009 0.009	CPXV_Ger19 71_EP1 0.011 0.012 0.010 0.011 0.011 0.011 0.011 0.011 0.011 0.011 0.011 0.011 0.010 0.010 0.012	CPXV_Ger20 10_Raccoon 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.009 0.008 0.008 0.008 0.000	CPXV_Ger20 10_Rat 0.009 0.011 0.012 0.012 0.012 0.012 0.010 0.010 0.010 0.010 0.010	CPXV_Ger20 14_Cat1 0.008 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009	CPXV_Ger20 15_Human2 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.000 0.000 0.000	CPXV_HumL an08_1 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.010 0.000 0.010 0.000	CPXV_JagKr e08_1	D D CPXV_JagKr e08_2 0.002 0.000 0.000 0.000 0.010 0.000 0.010 0.000 0.010 0.000	CPXV_Monk re08_4	CPXV_Ama_ 2015	CPXV_Ger2C 10_Alpaca	CPXV_Ger20 12_Alpaca	CPXV_Ger20 14_Cat2	CPXV_Ger20 15_Cat2	CPXV_Ger2C 17_Alpaca2	CPXV_Ger20 17_Vole	CPXV_BeaB er04_1	CPXV_CatPo t07_1	CPXV_Ger20 13_Alpaca	CPXV_Hum Ber07_1	CPXV_Hu mMag07_1
CPXV_EleGn07_1 CPXV_EleGn07_1 CPXV_Ger1980_EP4 CPXV_Ger1980_EP4 CPXV_Ger2010_Rat CPXV_Ger2010_Rat CPXV_Ger2010_Rat CPXV_Ger2010_Rat CPXV_Ger2015_Human2 CPXV_JagKre08_1 CPXV_JagKre08_1 CPXV_JagKre08_2 CPXV_MonKre08_4 CPXV_Ger2010_Alpaca CPXV_Ger2010_Alpaca CPXV_Ger2012_Alpaca CPXV_Ger2012_Alpaca CPXV_Ger2012_Alpaca CPXV_Ger2012_Alpaca CPXV_Ger2012_Alpaca CPXV_Ger2012_Alpaca CPXV_Ger2012_Alpaca CPXV_Ger2012_Alpaca CPXV_Ger2012_Alpaca CPXV_Ger2012_Alpaca2 CPXV_Ger2017_Vole	CPXV_EleGr i07_1 0.012 0.009 0.009 0.010 0.011 0.001 0.001 0.007 0.007 0.008 0.008 0.008 0.008 0.008 0.008 0.008 0.000 0.009 0.000 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.000 0.001 0.0000 0.000000	CPXV_Ger19 80_EP4 0.006 0.012 0.010 0.009 0.010 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.010 0.009 0.010 0.009 0.010 0.010 0.011 0.011 0.011	CPXV_Ger20 02_MKY 0.011 0.009 0.005 0.007 0.009 0.011 0.011 0.011 0.011 0.011 0.009 0.009 0.009 0.010 0.009 0.010	CPXV_Ger19 71_EP1 0.011 0.012 0.010 0.011 0.011 0.011 0.011 0.011 0.011 0.011 0.010 0.011 0.010 0.012 0.010 0.010	CPXV_Ger20 10_Raccoon 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.009 0.008 0.008 0.008 0.008 0.0010	CPXV_Ger20 10_Rat 0.009 0.011 0.012 0.012 0.012 0.012 0.012 0.010 0.010 0.010 0.010 0.010 0.010 0.011 0.011	CPXV_Ger20 14_Cat1 0.008 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009	CPXV_Ger20 15_Human2 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.000 0.000 0.000 0.000 0.000	CPXV_HumL an08_1 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	CPXV_JagKr e08_1	D D CPXV_JagKr e08_2 	CPXV_Monk re08_4	CPXV_Ama_ 2015	CPXV_Ger2C 10_Alpaca	CPXV_Ger2C 12_Alpaca	0.008 CPXV_Ger20 14_Cat2	CPXV_Ger20 15_Cat2	CPXV_Ger2C 17_Alpaca2	CPXV_Ger20 17_Vole	CPXV_BeaB er04_1	CPXV_CatPo t07_1	CPXV_Ger20 13_Alpaca	CPXV_Hum Ber07_1	CPXV_Hu mMag07_1
CPXV_EleGri07_1 CPXV_EleGri07_1 CPXV_Ger1980_EP4 CPXV_Ger1980_EP4 CPXV_Ger1997_EP1 CPXV_Ger1971_EP1 CPXV_Ger2010_Rat CPXV_Ger2014_cat1 CPXV_Ger2015_Human2 CPXV_HumLan08_1 CPXV_JagKre08_2 CPXV_Monkre08_4 CPXV_Monkre08_4 CPXV_Ana_2015 CPXV_Ger2012_Alpaca CPXV_Ger2014_Cat2 CPXV_Ger201	CPXV_EleGr i07_1 0.012 0.009 0.009 0.010 0.011 0.007 0.008 0.008 0.008 0.008 0.008 0.008 0.008 0.008 0.008 0.009 0.008 0.008 0.008 0.008 0.008 0.009 0.0000 0.0090	CPXV_Ger19 80_EP4 0.006 0.012 0.010 0.004 0.009 0.010 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.010 0.009 0.010 0.010 0.011 0.001	CPXV_Ger20 02_MKY 0.011 0.009 0.005 0.007 0.009 0.011 0.011 0.011 0.011 0.011 0.009 0.009 0.009 0.009 0.010 0.009 0.009	CPXV_Ger19 71_EP1 0.011 0.012 0.010 0.010 0.011 0.011 0.011 0.011 0.011 0.011 0.011 0.011 0.011 0.011 0.010 0.010 0.010 0.010	CPXV_Ger20 10_Raccoon 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	CPXV_Ger20 10_Rat 0.009 0.011 0.012 0.012 0.012 0.012 0.012 0.012 0.010 0.010 0.010 0.010 0.010 0.011 0.011	CPXV_Ger20 14_Cat1 0.008 0.009	CPXV_Ger20 15_Human2 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.000 0.006 0.006 0.006	CPXV_HumL an08_1 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	CPXV_JagKr e08_1	D D CPXV_JagKr e08_2 0.000 0.009 0.000 0.009 0.010 0.0007 0.000 0.0007 0.0007 0.0007	CPXV_Monk re08_4	CPXV_Ama_ 2015	CPXV_Ger2C 10_Alpaca	CPXV_Ger2C 12_Alpaca	0.008 0.008 0.008 0.008	CPXV_Ger20 15_Cat2	CPXV_Ger2C 17_Alpaca2	CPXV_Ger20 17_Vole	CPXV_BeaB er04_1	CPXV_CatPo t07_1	CPXV_Ger20 13_Alpaca	CPXV_Hum Ber07_1	CPXV_Hu mMag07_1
CPXV_EleGn07_1 CPXV_Ger1980_EP4 CPXV_Ger1980_EP4 CPXV_Ger1980_EP4 CPXV_Ger1971_EP1 CPXV_Ger1971_EP1 CPXV_Ger2010_Ratcoon CPXV_Ger2010_Rat CPXV_Ger2015_Human2 CPXV_JagKre08_1 CPXV_JagKre08_1 CPXV_JagKre08_4 CPXV_MonKre08_4 CPXV_MonKre08_4 CPXV_Ger2012_Alpaca CPXV_Ger2012_Alpaca CPXV_Ger2012_Alpaca CPXV_Ger2012_Alpaca CPXV_Ger2012_Alpaca CPXV_Ger2017_Alpaca2 CPXV_Ger2017_Vole CPXV_Ger2017_I CPXV	CPXV_EleGr i07_1 0.012 0.009 0.000 0.011 0.011 0.007 0.008 0.008 0.008 0.008 0.008 0.008 0.008 0.008 0.009 0.009 0.009 0.009 0.009 0.009 0.000 0.009 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.000000	CPXV_Ger19 80_EP4 0.006 0.012 0.010 0.004 0.010 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.010 0.009 0.010 0.009 0.010 0.00100000000	CPXV_Ger20 02_MKY 0.011 0.009 0.005 0.007 0.009 0.011 0.011 0.011 0.011 0.011 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.007 0.007	CPXV_Ger19 71_EP1 0.011 0.012 0.010 0.011 0.011 0.011 0.011 0.011 0.011 0.010 0.011 0.010 0.010 0.010 0.010 0.010	CPXV_Ger20 10_Raccoon 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.009 0.008 0.008 0.008 0.009 0.009 0.009 0.009	CPXV_Ger20 10_Rat 0.009 0.011 0.012 0.012 0.012 0.012 0.010 0.010 0.010 0.010 0.011 0.011 0.011 0.009 0.009	CPXV_Ger20 14_Cat1 0.008 0.009	CPXV_Ger20 15_Human2 0.007 0.006 0.007 0.006 0.008	CPXV_HumL an08_1 0.000	CPXV_JagKr e08_1	D D CPXV_JagKr e08_2	CPXV_Monk re08_4	CPXV_Ama_ 2015	CPXV_Ger2C 10_Alpaca	CPXV_Ger20 12_Alpaca 	0.009 CPXV_Ger20 14_Cat2	CPXV_Ger20 15_Cat2	CPXV_Ger2C 17_Alpaca2	CPXV_Ger20 17_Vole	0.011 CPXV_BeaB er04_1	CPXV_CatPo t07_1	CPXV_Ger20 13_Alpaca	CPXV_Hum Ber07_1	CPXV_Hu mMag07_ 1
CPXV_EleGn07_1 (PXV_Ger199/LPP1- (PXV_Ger1980_EP4 (PXV_Ger2002_MKY (PXV_Ger2012_MKY (PXV_Ger2010_Rat (PXV_Ger2010_Rat (PXV_Ger2011_Human2 (PXV_Ger2015_Human2 (PXV_JagKre08_1 (PXV_JagKre08_1 (PXV_JagKre08_1 (PXV_JagKre08_2 (PXV_JagKre08_2 (PXV_Ger2012_Alpaca (PXV_Ger2013_Alpaca (PXV_Ger2013_Alpaca (PXV_Ger2013_Alpaca (PXV_Ger2017_Vole (PXV_Ger2013_Alpaca (PXV_Ger20	CPXV_EleGr i07_1 0.012 0.009 0.000 0.010 0.011 0.007 0.008 0.008 0.008 0.008 0.008 0.008 0.008 0.008 0.000 0.000 0.000 0.009 0.000 0.009 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.000000	CPXV_Ger19 80_EP4 0.006 0.012 0.000 0.010 0.010 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.010 0.009 0.010 0.011 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.000000	CPXV_Ger20 02_MKY 0.011 0.009 0.005 0.007 0.009 0.011 0.011 0.011 0.011 0.011 0.011 0.011 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.007 0.007	CPXV_Ger19 71_EP1 0.011 0.012 0.010 0.011 0.011 0.011 0.011 0.011 0.011 0.011 0.011 0.011 0.010 0.010 0.010 0.010 0.010 0.010	CPXV_Ger20 10_Raccoon 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.009 0.008 0.008 0.008 0.000 0.009 0.009 0.009 0.009 0.009	CPXV_Ger20 10_Rat 0.009 0.011 0.012 0.012 0.012 0.010 0.010 0.010 0.010 0.010 0.011 0.011 0.011 0.009 0.009	CPXV_Ger20 14_Cat1 0.008 0.009 0.000	CPXV_Ger20 15_Human2 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.006 0.006 0.008 0.008	CPXV_HumL an08_1 0.000	CPXV_JagKr e08_1	D D CPXV_JagKr e08_2 0.008_2 0.009 0.009 0.0000 0.000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.000000	CPXV_Monk re08_4	CPXV_Ama_ 2015	CPXV_Ger2C 10_Alpaca 0.008 0.008 0.0008 0.0008 0.0008 0.0008 0.0008 0.0008	CPXV_Ger20 12_Alpaca 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	CPXV_Ger20 14_Cat2	0.000 CPXV_Ger20 15_Cat2 0.004 0.004 0.005 0.008 0.008	CPXV_Ger2C 17_Alpaca2	CPXV_Ger20 17_Vole	0.011 CPXV_BeaB er04_1	CPXV_CatPo t07_1	CPXV_Ger20 13_Alpaca	CPXV_Hum Ber07_1	CPXV_Hu mMag07_1 
CPXV_EleGn07_1 (PXV_Ger1980_EP4 (PXV_Ger1980_EP4 (PXV_Ger1980_EP4 (PXV_Ger2010_Rat (PXV_Ger2010_Rat (PXV_Ger2010_Rat (PXV_Ger2010_Rat (PXV_Ger2015_Human2 (PXV_Humlan08_1 (PXV_JagKre08_1 (PXV_JagKre08_1 (PXV_JagKre08_1 (PXV_JagKre08_1 (PXV_JagKre08_1 (PXV_Ger2010_Alpaca (PXV_Ger2010_Alpaca (PXV_Ger2012_Alpaca (PXV_Ger2012_Cat2 (PXV_Ger2017_Vole (PXV_Ger2017_Vole (PXV_Ger2011_Vole (PXV_Ger2011_Vole (PXV_Ger2011_Alpaca (PXV_Ger2011_Alpaca (PXV_Ger2011_Alpaca (PXV_Ger2011_Alpaca (PXV_Ger2013_Alpaca (PXV_Ger2013_Alpaca (PXV_Ger2013_Alpaca (PXV_Ger2011_Vole (PXV_Ger2013_Alpaca (PXV_Ger2013_Alpaca (PXV_Ger2011_Vole (PXV_Ger2013_Alpaca (PXV_Ger20	CPXV_EleGr i07_1 0.012 0.009 0.009 0.010 0.011 0.007 0.007 0.007 0.008 0.008 0.008 0.008 0.008 0.008 0.008 0.009 0.000 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.000 0.001 0.001 0.001 0.001 0.001 0.001 0.0000 0.0000 0.0000 0.000000	CPXV_Ger19 80_EP4 0.006 0.012 0.010 0.004 0.009 0.010 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.010 0.009 0.010 0.011 0.011 0.00100000000	CPXV_Ger20 02_MKY 0.011 0.001 0.005 0.007 0.009 0.011 0.011 0.011 0.011 0.011 0.011 0.011 0.009 0.009 0.009 0.009 0.009 0.009 0.007 0.007 0.007 0.004 0.004	CPXV_Ger19 71_EP1 0.011 0.012 0.010 0.010 0.011 0.011 0.011 0.011 0.011 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.011 0.011	CPXV_Ger20 10_Raccoon 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009	CPXV_Ger20 10_Rat CPXV_Ger20 10_Rat 0.009 0.011 0.012 0.012 0.012 0.012 0.012 0.012 0.010 0.010 0.010 0.011 0.010 0.011 0.009 0.001 0.011 0.009 0.000 0.001 0.001 0.001 0.000 0.001 0.001 0.000 0.001 0.0000 0.0000 0.00000 0.0000 0.00000 0.00000 0.00000 0.00000 0.0000000 0.	CPXV_Ger20 14_Cat1 0.008 0.009 0.000 0.009 0.0000 0.000 0.0000 0.0000 0.0000 0.0000 0.0000 0.000000	CPXV_Ger20 15_Human2 0.007 0.0	CPXV_HumL an08_1 0.000	CPXV_JagKr e08_1	D D CPXV_JagKr e08_2 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	CPXV_Monk re08_4	CPXV_Ama_ 2015	CPXV_Ger2C 10_Alpaca 	CPXV_Ger20 12_Alpaca 	0.009 CPXV_Ger20 14_Cat2	CPXV_Ger20 15_Cat2	CPXV_Ger2C 17_Alpaca2	CPXV_Ger20 17_Vole	CPXV_BeaB er04_1	CPXV_CatPo t07_1	CPXV_Ger20 13_Alpaca	CPXV_Hum Ber07_1	CPXV_Hu mMag07_1 
CPXV_EleGn07_1 CPXV_EeleGn07_1 CPXV_Ger1980_EP4 CPXV_Ger1980_EP4 CPXV_Ger2002_MKY CPXV_Ger2010_Rat CPXV_Ger2010_Rat CPXV_Ger2015_Human2 CPXV_Ger2015_Human2 CPXV_Japkre08_1 CPXV_Japkre08_1 CPXV_Japkre08_2 CPXV_MonKre08_4 CPXV_Japaca CPXV_Ger2012_Alpaca CPXV_Ger2012_Alpaca CPXV_Ger2013_Alpaca CPXV_Ger2013_Alpaca CPXV_Ger2013_Alpaca CPXV_Ger2013_Alpaca CPXV_HumBer07_1 CPXV_HUMBEr07_HUMBEr07_1 CPXV_HUMBEr07_	CPXV_EleGr i07_1 0.012 0.009 0.009 0.010 0.011 0.001 0.001 0.001 0.008 0.008 0.008 0.008 0.008 0.008 0.008 0.008 0.008 0.009 0.0008 0.009 0.0008 0.009 0.000 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.000 0.008 0.008 0.008 0.008 0.009 0.009 0.009 0.000 0.008 0.008 0.008 0.008 0.008 0.009 0.009 0.009 0.009 0.008 0.008 0.008 0.008 0.009	CPXV_Ger19 80_EP4 0.006 0.012 0.010 0.010 0.010 0.010 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.012 0.010 0.010 0.009 0.011 0.011 0.00100000000	CPXV_Ger20 02_MKY 0.011 0.001 0.005 0.005 0.007 0.009 0.011 0.011 0.011 0.011 0.011 0.011 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.009 0.007 0.009 0.007 0.007 0.007 0.007	CPXV_Ger19 71_EP1 0.011 0.012 0.010 0.011 0.011 0.011 0.011 0.011 0.011 0.011 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.011	CPXV_Ger20 10_Raccoon 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.009 0.008 0.008 0.008 0.008 0.009 0.009 0.009 0.009 0.009 0.009 0.009	CPXV_Ger20 10_Rat 0.009 0.011 0.012 0.012 0.012 0.012 0.010 0.010 0.010 0.010 0.010 0.010 0.011 0.011 0.011 0.011 0.009 0.009 0.009 0.009 0.009	CPXV_Ger20 14_Cat1 0.008 0.009 0.000 0.009 0.0000 0.000 0.0000 0.0000 0.0000 0.0000 0.0000 0.000000	CPXV_Ger20 15_Human2 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.007 0.000 0.008 0.008 0.008 0.009 0.008	CPXV_HumL an08_1 	CPXV_JagKr e08_1	D D CPXV_JagKr e08_2 0.000 0.009 0.000 0.009 0.0000 0.0000 0.0000 0.0000 0.000000	CPXV_Monk re08_4	CPXV_Ama_ 2015	CPXV_Ger2C 10_Alpaca 	CPXV_Ger2C 12_Alpaca 	0.009 CPXV_Ger20 14_Cat2	CPXV_Ger20 15_Cat2	CPXV_Ger2C 17_Alpaca2	CPXV_Ger20 17_Vole	CPXV_BeaB er04_1	CPXV_CatPo t07_1	CPXV_Ger20 13_Alpaca	CPXV_Hum Ber07_1	CPXV_Hu mMag07_1 

Paper III

# Whole genome sequencing of recombinant viruses obtained from co infection and superinfection of Vero cells with Modified Vaccinia virus Ankara vectored influenza vaccine and a naturally occurring cowpox virus

4 Diana Diaz-Cánova, Ugo Moens\*, Annika Brinkmann, Andreas Nitsche and Malachy Ifeanyi
5 Okeke\*

# 6 Abstract:

# 7 Background:

8 Modified vaccinia virus Ankara (MVA) has been widely tested in clinical trials as recombinant vector 9 vaccine against infectious diseases and cancers in humans and animals. However, one biosafety concern 10 about the use of MVA vectored vaccine is the potential for MVA to recombine with naturally occurring 11 orthopoxviruses in cells and hosts in which it multiplies poorly. We previously conducted co-infection 12 and superinfection experiments with MVA vectored influenza vaccine (MVA-HANP) and a feline 13 Cowpox virus (CPXV-No-F1) in Vero cells (that were semi-permissive to MVA infection) and showed 14 that recombination occurred in both co-infected and superinfected cells.

# 15 **Results:**

16 In this study, we selected the progeny viruses and performed genomic characterization of these viruses. 17 Some progeny viruses displayed plaque morphology distinct of that of the parental viruses. Our analysis 18 demonstrated that they had mosaic genomes of different lengths. The HA-transgene-expressing progeny 19 viruses contained the transgene expression cassette. Furthermore, the recombinant viruses, with a 20 genome more similar to MVA-HANP (>50%), rescued deleted and/or fragmented genes in MVA and 21 gained new host ranges genes. Our analysis also revealed that some MVA-HANP contained a partially 22 deleted transgene expression cassette and one progeny virus contained part of the transgene expression 23 cassette similar to that incomplete MVA-HANP.

# 24 Conclusion:

The recombination in co-infected and superinfected Vero cells resulted in recombinant viruses with unpredictable biological and genetic properties as well as recovery of delete/fragmented genes in MVA and transfer of the transgene into replication competent CPXV. These results are relevant to hazard characterization and risk assessment of MVA vectored biologicals.

# 29 Background:

30 The Orthopoxvirus genus belongs to the Poxviridae family. The orthopoxviruses (OPXV) are viruses 31 with large linear double stranded DNA genome (170 to 250 kbp) [1]. OPXV can infect vertebrates and 32 insects [2]. Among the OPXV that cause human diseases, Variola virus (VARV), vaccinia-like virus, 33 Cowpox virus (CPXV) and Monkeypox virus (MPXV) are the most common [3–6]. VARV is the 34 causative agent of smallpox, a deadly viral disease, which was eradicated in 1980 as a result of a massive 35 vaccination campaign [7]. During the smallpox campaign, Vaccinia virus (VACV) was used as the 36 smallpox vaccine and several VACV strains have been developed and used in different countries, such 37 as New York City Board of Health (NYCBH) was used in the America, Tian tan in China, Ankara in 38 Turkey, and Lister and modified vaccinia virus Ankara (MVA) in Europe [8–10].

MVA was administrated to over 120,000 people in Germany with no reported major side effects [10– 13]. MVA was derived from Chorioallantois vaccinia virus Ankara (CVA) by over 570 passages in primary chicken embryo fibroblasts [14]. In this process, CVA genome suffered modifications including six large deletions and other mutations that lead to the reduction of the genome from 208 kbp in CVA to 170kbp in MVA [15,16]. These mutations affected many genes involved in virus–host interaction and other genes responsible for evasion of the host immune response [16,17].

45 As a result, MVA is unable to replicate productively in most mammalian cell lines [15,17–21]. Although 46 some mammalian cell lines have been reported as permissive to MVA, such as Baby Hamster Kidney 47 (BHK-21) cells [21,22], and semi-permissive to MVA, such as Vero cells (African green monkey kidney 48 epithelial cells) [15,20]. Recently, it was shown that a repair of the inactivated C16R/B22R in 49 conjunction with the restoration of the deleted C12L gene restores production infection of many human 50 cells with MVA [23]. The host range restriction of MVA is considered the major biosafety advantage for 51 its use as a vaccine vector along with its immunogenicity, its incapability to cause illness *in vivo* and its 52 safety record [24–26].

53 Since the nineties, MVA has been widely tested in clinical trials as recombinant vector for vaccination 54 against infectious diseases and cancers in both humans and animals [27,28]. Today, several MVA 55 vaccines against HIV [29,30], Ebola [31–34], respiratory syncytial virus [35], Middle East Respiratory 56 Syndrome [36], cytomegalovirus [37], influenza [38,39], tuberculosis [40] and malaria [41–43] are in 57 different phases of clinical trials. MVA-BN (JYNNEUS or Imvanex) is licensed as a vaccine against Mpox 58 and smallpox in both Europe and USA, and is currently being used for immunization against current 59 global Mpox outbreak [44,45]. Even though MVA is already deployed as a vaccine and is a promising 60 viral vector, there are still some biosafety aspects that should be considered during the biological hazard 61 characterization of MVA and recombinant MVA (rMVA). One is the potential for MVA or rMVA to 62 recombine with naturally occurring OPXV, which could lead to the rescue of interrupted or deleted genes 63 in MVA or to transfer of the transgene to multiplication competent OPXV [46]. Hence, the 64 recombination could result in the emergence of novel mosaic viruses with atypical virulence and host 65 range characteristics. Recombination is not a rare event between OPXV. Natural occurring 66 recombination events between OPXV have been reported [47,48,57,49-56]. However, the possibility of 67 recombination was considered negligible due to the low likelihood of co-localization of the viruses in the 68 same cell, poor or no multiplication of MVA in many mammalian cells and superinfection exclusion 69 [58,59].

The circulation of naturally zoonotic OPXV, such as CPXV and MPXV, has increased in recent years [6]. Several cases of human cowpox infections caused by infected animals have been reported in Europe [57,60–68] and the global outbreak of human Mpox has been reported in 110 countries [69] followed by increased vaccination with MVA. Therefore, the possibility of co-localization and recombination could have increased. We highlight that there is a need to better understand the mechanism of recombination and possible public health threat of recombination after co- and superinfection of two poxviruses.

In a previous study, we have demonstrated recombination in Vero cells co-infected and superinfected with recombinant MVA expressing the influenza virus *haemagglutinin* (*HA*) and *nucleoprotein* (*NP*) proteins (MVA-HANP) and feline CPXV [27]. In the present study, we sequenced the genome of progeny viruses produced in semipermissive Vero cells co-infected and superinfected with MVA-HANP and feline CPXV-No-F1, conducted genomic characterization of parental and progeny viruses and mapped genome-wide recombination events in the hybrid progeny viruses.

# 82 Results:

83 Plaque phenotype formed by progeny viruses after co-infected and superinfected Vero

84 cells

85 The plaque phenotype caused by progeny viruses and the parental viruses were examined in Vero cells.
86 The parental CPXV-No-F1 forms medium, semilytic plaques. Whereas MVA-HANP do not produce
87 plaques; however, some Vero cells have positive immunostaining for the HA transgene as a result of
88 MVA-HANP limited infection and expression of its HA transgene (Fig. 1).



90 Fig. 1. Plaque phenotypes of the parental viruses (MVA-HANP and CPXV-No-F1) and the progeny viruses obtained from either 91 co-infection or superinfection with MVA-HANP and CPXV-No-F1 in Vero cells. A, The parental virus MVA-HANP. B, The parental 92 virus CPXV-No-F1. C, Recombinant virus R1 from co-infection MVA-HANP and CPXV-No-F1. D, E Recombinant virus R2 and 93 R3 from superinfection 1 (primary infection with CPXV-No-F1 and secondary infection with MVA-HANP at 4h post primary 94 infection, ppi). F-H Recombinant virus R4, R5 and R6 from superinfection 2 (primary infection with MVA-HANP and secondary 95 infection with CPXV-No-F1 at 4h ppi). I-M Recombinant virus R7, R8, R9, R10 and R11 from superinfection 3 (primary infection 96 with CPXV-No-F1 and secondary infection with MVA-HANP at 6h ppi). N Recombinant virus R12 from superinfection 4 (primary 97 infection with MVA-HANP and secondary infection with CPXV-No-F1 at 6h ppi).

Different plaques phenotypes and transgene-expressing plaques were observed in co-infected Vero cells.
One progeny virus was isolated from co-infected Vero cells, which was named R1. The plaque of this
recombinant virus is large, lytic, and characterized by syncytium formation and cell lysis (Fig. 1C). In

recombinant virus is large, if he, and characterized by syncytrain formation and cen if its ite,

101 addition, this recombinant forms HA transgene negative plaques.

Similarly, different plaque phenotypes were observed in superinfected Vero cells regardless the virus strain used for the primary infection and the timing (4 and 6 hours ppi). Additionally, both the transgene-expressing and non-transgene-expressing progeny viruses display different plaque phenotypes (Fig. 1D-N). Two, three, five and one viruses were selected from superinfection 1, superinfection 2, superinfection 3 and superinfection 4, respectively (see methods for details). We referred to these progeny viruses as R2, R3, R4, R5, R6, R7, R8, R9, R10, R11 and R12.

The progeny virus R2 from the superinfection 1 expresses the HA transgene and produced small and non-lytic plaques with secondary spread (comet formation). Whereas progeny virus R3 from the same experiment is transgene negative and forms medium and lytic plaques (Fig. 1E). The plaques of the progeny virus R4 and R5 from superinfection 2 are large, lytic and transgene positive. Unlike progeny virus R4 and R5, the progeny virus R6 is transgene negative and forms medium and semilytic plaques with extensive secondary spread (Fig. 1F-H).

The progeny virus R7, R8 and R9 from superinfection 3 form large and lytic plaques (Fig. 1I-K). However, compared to the progeny virus R7 and R8, R9 do not express the transgene and forms syncytia. The other two progeny viruses were chosen from superinfection 3, progeny virus R10 and R11. Both progeny viruses express the *HA* transgene and form semilytic plaques (Fig. 1L-M). However, the size of their plaques is different. The progeny virus R11 produces large plaques, whereas the progeny virus R10

- 119 generates medium plaques. The progeny virus R12 from superinfection 4 expresses the HA transgene
- 120 and displays small and non-lytic plaques with comet formation (Fig. 1N).
- 121

134

# 122 Different genome size of the progeny viruses

123 The complete genomes of thirteen progeny viruses and the parental virus MVA-HANP were sequenced, 124 assembled, and annotated (Fig. 2). The assembled genome of the parental MVA-HANP has a length of 125 181,712 bp, with inverted terminal repeats (ITR) of 9.8 kbp. Genome annotation predicted 199 coding 126 sequences (CDS) in MVA-HANP genome (Table S1). The sequencing analysis of the parental MVA-127 HANP showed that the double expression cassette containing the influenza HA and NP transgenes was 128 inserted in A51R/A55R hybrid gene. However, the assembly of MVA-HANP showed that there are two 129 populations of MVA-HANP, one with the complete double expression cassette (181,712 bp) and other 130 with an incomplete double expression cassette (178,579 bp). The small part of NP transgene ( $\sim 6\%$ ), 131 whole HA transgene and downstream MVA-HANP flanking sequence (containing VACV-Cop A56R 132 gene) are deleted in the latter. It only contains major part of the NP transgene (94%) and the upstream 133 flanking MVA sequence (Fig. S1).

	1 20,000	40,000	60,000	80,000	100,000	120,000	140,000	160 <sub>1</sub> 000	180,000	200,000	220,000 233,248
CPXV-No-F1											
				CO	NSERVED CENT	RAL REGION					
MVA-HANP	1		****						<b>*****</b>		
Coinfection B1	****		*******						<b>()()())</b>		
connection - Ki	MAMANA	ana	and an and a			AND HOLM	MALANNA		and and the second		
Superinfection 1- R2											
Superinfection 1- R3											
Superinfection 2- R4									ala and interior		
								- <b>-</b>	••••••••••••••••••••••••••••••••••••••		
Superinfection 2- R5	*****										
		a or o ra anna an dra			، مايۇرىيە ئەر	anna ha sult ar					
Superinfection 2- R6	*****										
Superinfection 3- R7	# <b>~</b> ######										
									. •		
Superinfection 3- R8	****										N. MINH
Superinfection 3- R9	*****										
Superinfection 3- R10									<u> </u>		
	d	eletion]									
Superinfection 3- R11											
-			4								
Superinfection 4- R12		****									
	d	eletion]							•		

135 Fig. 2. Genome map of the parental viruses (CPXV-No-F1 and MVA-HANP) and the progeny viruses. The progeny viruses were 136 produced in Vero cells either co-infected or superinfected with CPXV-NoH1 and MVA-HANP. Superinfection 1, primary infection 137 with CPXV-No-F1 and secondary infection with MVA-HANP at 4h post primary infection (ppi); Superinfection 2, primary 138 infection with MVA-HANP and secondary infection with CPXV-No-F1 at 4h ppi; Superinfection 3, primary infection with CPXV-139 No-F1 and secondary infection with MVA-HANP at 6h ppi; Superinfection 4, primary infection with MVA-HANP and secondary 140 infection with CPXV-No-F1 at 6h ppi. Blue blocks represent the coding sequences (CDS) from CPXV-No-F1. Red blocks represent 141 CDS from MVA-HANP. Green blocks represent the influenza virus hemagglutinin (HA) and nucleoprotein (NP) transgenes. 142 Turquoise blocks represent deleted regions in the progeny viruses. Yellow block represents the conserved central region (VACV-143 Cop F4L – VACV-Cop A24R) in orthopoxvirus genomes.

144

The genome size and the number of predicted CDS of the parental and progeny virus genomes are shown in the Table 1 and Table S2. The length of progeny virus genomes was not uniform, ranging from 176.9 kbp to 221 kbp. Three progeny viruses (R3, R5 and R9) have similar genome size to that of the parental CPXV-No-F1 and one recombinant virus (R12) possesses a smaller genome than that of the parental MVA-HANP (Table 1). No progeny virus has a bigger genome than the parental viruses. The ITR of the progeny viruses ranged from 4.7 kbp to 8.3 kbp.

152 Table 1. Genome size and number of predicted CDS of CPXV-No-F1, MVA-HANP and the progeny viruses

1	Experiment	Virus	Genome (bp)	Inverted terminal repeat (bp)	CDS	Expressing HA transgene
		MVA-HANP	181,712	9882	199	Yes
		CPXV-No-F1	221,334	7929	217	-
Co-infection	CPXV-NO-F1/ MVA- HANP	R1	218,322	8219	216	No
	Superinfection 1 (CPXV-	R2	215,275	8251	220	Yes
	NO-F1/ MVA-HANP 4h)	R3	221,213	7929	217	No
		R4	199,702	7045	210	Yes
	Superinfection 2 (MVA- HANP/CPXV-NO-F1-4h)	R5	220,926	7813	214	Yes
	,	R6	218,106	8365	217	No
Superinfection		R7	216,643	5908	213	Yes
		R8	216,086	8339	218	Yes
	Superinfection 3 (CPXV- NO-F1/ MVA-HANP-6h)	R9	221,198	7853	217	No
		R10	185,955	6959	198	Yes
		R11	204,628	8054	212	Yes
	Superinfection 4 (MVA- HANP/ CPXV-NO-F1-6h)	R12	176,918	4694	197	Yes

154 The number of predicted CDS in the genomes of the progeny viruses varied from 197 to 220 CDS (Table 155 1). The progeny virus genomes included more CDS than the parental MVA-HANP, with exception of the 156 recombinant viruses R10 and R12. Furthermore, there were three recombinant viruses (R3, R6 and R9) 157 that contained the same number of predicted CDS as the parental CPXV-No-F1.

158

# 159 Mosaic genome of the progeny viruses

160 In order to localize the possible recombination events in the progeny virus, the thirteen progeny viruses 161 were examined for recombination. The analysis confirmed recombination across the genome of twelve 162 progeny viruses (Table S3). Only one progeny virus, R9 from superinfection 3, do not show any 163 recombination event based on the recombination analysis. The location of recombinant events in the genome of the progeny viruses are aleatory, there are no recombination distribution pattern along their 164 165 genomes. The recombination events occur both in the conserved central region (VACV-Cop F4L to 166 VACV-Cop A24L) and the variable regions, including ITR (Table S3, Fig. 2). The number of recombinant 167 breakpoints distribute in the central region varied from 0 to 16, whereas the number of breakpoints in 168 the variable regions ranges from 1 to 6. Curiously, no recombination event is detected in the genomic 169 region from VACV-Cop N2L gene (CPXV-Br010) to VACV-Cop K3L gene (CPXV-Br034) in any of the 170 progeny viruses.

171 The genomes of the progeny viruses are a mosaic of the two parental strains (CPXV-No-F1 and MVA-172 HANP), except for progeny virus R9. The lengths of the DNA segments exchanged between the parental 173 viruses range from approximately 200 bp to 36 kbp (Fig. 2). The percentage of DNA derived from the 174 parental strains in the progeny viruses is variable (Fig. 3). The majority of the recombinant progeny 175 viruses have more DNA from the parental CPXV-No-F1 than that from the parental MVA-HANP; 176 nevertheless, some of them contain the HA and NP transgenes. Only two recombinant progeny viruses, 177 R2 from superinfection 1 and R12 from superinfection 4, contain more DNA from the parental MVA-178 HANP (Fig. 3, Table S4).



180

Fig. 3. Percentage of DNA derived from the parental viruses (CPXV-No-F1 and MVA-HANP) in the progeny viruses. The progeny viruses were produced in Vero cells co-infected and superinfected with CPXV-NoH1 and MVA-HANP. Superinfection 1, primary infection with CPXV-No-F1 and secondary infection with MVA-HANP at 4h post primary infection (ppi); Superinfection 2, primary infection with MVA-HANP and secondary infection with CPXV-No-F1 at 4h ppi; Superinfection 3, primary infection with CPXV-No-F1 and secondary infection with CPXV-No-F1 at 4h ppi; Superinfection 3, primary infection with MVA-HANP at 6h ppi; Superinfection 4, primary infection with MVA-HANP and secondary infection with CPXV-No-F1 at 6h ppi. Blue blocks represent the coding sequences (CDS) from CPXV-No-F1.

187

# 188 The influenza HA and NP transgenes were inserted in the same position in many of the

# 189 progeny viruses, but other genetic changes outside of recombination were present

190 The parental MVA-HANP harbored a double expression cassette containing the influenza HA and NP 191 transgenes. Several progeny viruses from both co-infected and superinfected Vero cells expressed the 192 HA transgene in Vero cells. The sequencing analysis of the seven HA transgene expressing recombinant 193 viruses (R2, R4, R5, R7, R8, R10, R11 and R12) confirmed that these viruses contain an intact double 194 expression cassette and its flanking sequences. The HA-NP transgene sequences are identical to those 195 of the parental MVA-HANP. The intergenic region between the HA and NP transgenes of MVA-HANP 196 is only identical to that of recombinant virus R2. Whereas the other recombinant viruses (R4, R5, R7, 197 R8, R11 and R12) have a single nucleotide deletion in that region. Moreover, the length of MVA recombinant region containing the *HA-NP* transgenes in the progeny virus genomes ranges from 5.4kbp to 68.5 kbp.

200 In co-infected and superinfected Vero cells, there are non-HA-transgene expressing progeny viruses that 201 formed plaques distinct from that of the parental viruses. The sequencing analysis of non-HA-transgene 202 expressing recombinant viruses (R1, R3, R6 and R9) revealed that the HA-NP insert is absent in the 203 recombinant viruses R3, R6 and R9, but not in the recombinant virus R1. Interestingly, the latter (R1) 204 contains part of the double expression cassette. It comprises major part of the NP transgene (94%) and 205 the upstream flanking MVA sequence (Fig. 4A) similar to the incomplete MVA-HANP (178,579 bp). The 206 presence of the incomplete MVA-HANP population with a partial deleted double cassette expression 207 was corroborated by the occurrence of recombinant progeny virus R1.



208

Fig. 4. Comparison of the progeny viruses with the parental virus. A, Comparison of the recombinant region of progeny virus R1 with MVA-HANP and incomplete MVA-HANP. The progeny virus R1 was produced in Vero cells co-infected with CPXV-No-F1 and MVA-HANP. Green blocks represent the influenza virus *hemagglutinin* (*HA*) and *nucleoprotein* (*NP*) transgenes. Red blocks represent the coding sequences (CDS) from MVA-HANP. B, Deletion in progeny viruses R10 and R12. The progeny virus R10 was produced in Vero cells infected with CPXV-No-F1 and superinfected with MVA-HANP at 6h post primary infection (ppi) (superinfection 3). The progeny virus R12 was produced in Vero cells infected with CPXV-No-F1 at 6h ppi (superinfection 4). Yellow blocks represent the deleted sequence in the progeny viruses.

217 In addition to the recombination events, our analyses revealed that the twelve progeny genomes 218 underwent other genetic variations, such as deletions. Although most of them are located outside of the 219 CDS regions (Table S5). A large deletion of 16,761 bp is found close to the left terminal genomic region 220 of recombinant viruses R10 and R12 from superinfection 3 and 4, respectively (Fig. 4B). The deleted 221 sequence comprises from CXPV-BR016 gene to CPXV-BR029 gene. Most of these genes encode proteins 222 involve in host range. Additional small deletions and insertions are also detected within these two 223 progeny genomes (Table S5). For instance, the VACV-Cop N2L gene of recombinant virus R10 has 224 suffered an internal deletion of 27 bp.

The other recombinant viruses also contain deletions, insertions and/or non-synonymous singlenucleotide mutations (nsSNMs). We found two nsSNMs in *VACV-Cop N2L* and *VACV-Cop K2L* genes of the progeny virus R9, that did not undergo recombination (Table S5). The nsSNM in the *VACV-Cop K2L* gene resulted in the introduction of a premature stop codon and consequently the truncation of the protein.

230

# 231 Rescue of loss genes and fragment/disrupted genes:

232 As mentioned before there are two recombinant progeny viruses with >50% of their genome derived 233 from MVA-HANP. These two recombinant viruses rescued disrupted/deleted genes and, furthermore, 234 gained genes that were absence in MVA-HANP. The recombinant virus R12 rescued CPXV-Broo9, 235 CPXV-Bro32, CPXV-Bro33, CPXV-Bro34, CPXV-Bro35 and CPXV-Bro36 genes (homologs to VACV-236 Cop C16L, C5L, C4L, C3L, C2L and C1L genes, respectively) that were lost in MVA during the attenuation 237 process. Additionally, four fragmented/disrupted genes, CPXV-Bro37, CPXv-Bro39, CPXV-Bro43 and 238 CPXV-Bro78 (homologs to VACV-Cop N1L, K1L, K5L and O1L genes, respectively), were rescued in the 239 recombinant virus R12 by recombination. Although O1L gene is also fragmented in VACV-CVA. 240 Moreover, the recombinant virus gained seven more genes that were absent in MVA and VACV-CVA 241 strains: CPXV-Br010, CPXV-Br011, CPXV-Br012, CPXV-Br013, CPXV-Br014, CXPV-Br015 genes and 242 one gene (No-F1-009 gene) that encodes BTB Kelch-domain containing protein. Compared to 243 recombinant virus R12, the recombinant virus R1 gained six additional genes (CPXV-Broo2, CPXV-244 Bro16, CPXV-Bro17, CPXV-Bro18, CPXV-Br19 and CPXV-Bro20 genes) by recombination.

Furthermore, the recombination events in recombinant virus R1 rescued of deleted genes: *CPXV-Broo5*, *CPXV-Broo9*, *CPXV-Bro32*, *CPXV-Bro33*, *CPXV-Bro34*, *CPXV-Bro35*, *CPXV-Bro36*, *CPXV-Bro39*, *CPXV-Bro40*, *CPXV-Br213*, *CPXV-Br217* and *CPXV-Br226* genes (homologs to *VACV-Cop B28R*, *C16L*, *C5L*, *C4L*, *C3L*, *C2L*, *C1L*, *M1L*, *M2L*, *B20R*, *C12L* and *C22L* genes). Additionally, twelve
fragmented/disrupted genes in MVA were also rescued in this recombinant virus (*CPXV-Bro03*, *CPXV- Broo6*, *CPXV-Bro08*, *CPXV-Bro23*, *CPXV-025*, *CPXV-Br027*, *CPXV-Br041*, *CPXv-Br078*, *CPXV- Br207*, *CPXV-Br212*, *CXPV-Br223* and *CPXV-Br227* genes).

252

# 253 Discussion:

254 In our previous study, we performed co-infection and superinfection experiments with a naturally 255 circulating Fennoscandian CPXV-No-F1 and MVA carrying an influenza HA and NP transgene in semi-256 permissive Vero cells. We have showed that recombination between these viruses occurred in both co-257 infected and superinfected Vero cells. Although the likelihood of recombination in co-infected and 258 superinfected Vero cells was always considered low because (1) Vero cells are semi-permissive to MVA 259 [15,20] and (2) mechanisms as superinfection exclusion prevent the superinfection of the infected cell 260 with a second virus [58,59]. A previous study has reported recombination between human CPXV 261 (hCPXV) and MVA-HANP in co-infected BHK-21 cells [70]. Compared to Vero cells, those cells are fully 262 permissive to MVA-HANP and CPXV [20]. Viral DNA replication in non-permissive cells to MVA 263 infection is not blocked [71], therefore the likelihood of recombination increases since recombination 264 and viral DNA replication are connected [72,73]. In our superinfection experiments, the time gap 265 between the first and the second infection was 4h and 6h ppi to ensure the establishment of primary 266 infection since it has been reported that VACV DNA synthesis in HeLa cells starts 2 hours postinfection 267 [74]. Although the viral DNA synthesis of the primary virus is not needed for superinfection exclusion 268 [59,75]. A study demonstrated the time of superinfection of 4 and 6 hours after primary infection with 269 VACV produced 90% and 99% exclusion of superinfecting virus, respectively [75].

The recombination breakpoints along the genome of the recombinant viruses were found both in the conserved central region and the variable regions. In orthopoxviral genomes the recombination events have occurred mainly in terminal regions, although it has been reported in the central region of the genome [47,48,57,49–56]. Interestingly, the only genomic region without any recombination event («coldspot of recombination») was between *CXPV-Bro10* to *CPXV-Bro43* gene. Although this region in two recombinant viruses had suffered a large deletion (from *CPXV-Bro16* to *CPXV-Bro29* gene).

277 The recombination between MVA-HANP and CPXV-NoH1 generated mosaic genomes containing 278 genomic material from both parental viruses. Additionally, DNA proportion of the parental genomes in 279 the recombinant viruses was not uniform. Most of them had more DNA from the parental CPXV-No-F1. 280 Several progeny viruses displayed plaque morphologies different from that of the parental viruses. This 281 was also observed in the progeny viruses arising from superinfected Vero cells with MVA-HANP and 282 CPXV-No-F1, using 2h ppi [27]. Similarly, the recombinant viruses from BHK-21 cells co-infected with 283 MVA-HANP and hCPXV displayed non-parental and parental traits with respect to plaque phenotype, 284 in vitro host range and cytopathogenicity [22,76].

285 Our recombinant viruses showed different plaque phenotypes. It has been reported that the proteins 286 encoded by VACV-Cop F5L, F11L, F12L, F13L, A33R, A34R, A36R, A56R, and B5R genes may be 287 involved in determining the plaque morphology [77-82]. Some of these genes were fragmented (i.e. 288 VACV-Cop F5L and VACV-Cop F11L gene) or encompassed some deletions (i.e. VACV-Cop A36R) in 289 MVA [16]. Two of our recombinant viruses (R2 and R12) formed small and non-lytic plaques. These 290 recombinant viruses contained the defective VACV-Cop F5L, F11L and VACV-Cop A36R genes from 291 MVA-HANP. F5L and F11L proteins are required to form normal plaques. They increase the plaque size 292 and only F5L protein promotes the formation of central plaque clearing [77-79]. The deletion of the 293 gene encoding A36R protein decreased the plaque size [83]. Additionally, these two recombinant viruses 294 displayed plaques with comet formation, similar to those of the recombinant virus R6. The genes 295 associated to the formation of comet-shaped plaques are VACV-Cop A33R, A34R and B5R [80,81,84]. 296 Those recombinant viruses contained VACV-Cop A33R, A34R and B5R genes from MVA-HANP, except 297 for recombinant virus R6 that contained VACV-Cop B5R gene derived from CPXV-No-F1. Other 298 recombinant viruses that only have VACV-Cop B5R gene from MVA-HANP, as well as VACV-Cop A33R 299 and VACV-Cop A34R genes from CPXV-No-F1, did not show plaques with comet formation.

Two of the progeny viruses produced syncytial plaques, R1 and R9. The progeny virus R1, compared to
other progeny viruses, did not undergo recombination. However, this virus produces a truncated K2L
protein due to the introduction of an earlier stop codon in the *VACV-Cop K2L* gene as a result of a SNP.
It has been reported that the lack of K2L protein causes the fusion of infected cells [85–87]. This protein
forms a complex with A56 protein, and the heterodimer prevents syncytia formation [88] [85–87,89].
The *VACV-Cop A56R* gene of R9 was intact; in contrast, this gene was deleted in the recombinant virus
R1.

307 Several progeny viruses were transgene positive. The proportion of HA-expressing recombinant viruses 308 in the co-infected and superinfected Vero cells were reported elsewhere [27]. The HA-expressing 309 progeny viruses had the complete double expression cassette; however, the non-HA-expressing progeny 310 virus R1 retained the NP transgene (96%), but not the HA transgene similar to the incomplete MVA-311 HANP. It seems that this progeny virus was the result of the recombination of CPXV-No-F1 and an 312 incomplete MVA-HANP. The instability of the transgene in MVA-HANP as well as in recombinant 313 progeny viruses from BHK-21 cells co-infected with MVA-HANP and CPXV-No-H1 has been previously 314 reported. MVA-HANP and the recombinant viruses were genetically unstable and lost the transgene 315 during cell culture passages [70,76]. The instability transgene is one of the major concerns in the 316 production of viral vector vaccines because any mutation in the expression cassette could lead to 317 unpredicted characteristics. Furthermore, the transgene is used as a tag to monitor the expression 318 cassette in the recombinant progeny viruses. Therefore, the loss or partial loss of the transgene hinders 319 the tracking of released recombinant progeny viruses. One possible solution to avoid transgene 320 instability is the insertion of the transgene(s) in the "coldspot of recombination" found in the 321 recombinant progeny viruses.

Another concern about the use of MVA-HANP is to transfer the transgene into a multiplication competent OPXV (Goosens, 2013). In this study, we have shown that the transgenes were transferred to the recombinant viruses with a genome mainly derived from CPXV-No-F1. Furthermore, the recombinant progeny viruses with the transgene displayed new and non-parental plaque phenotypes. A biological characterization of the recombinant viruses is required to investigate their host range, cell tropism, transmissibility and virulence. 328 Compared to CVA, MVA had lost several genes and 25 genes were fragmented and/or suffered mutations 329 during the attenuation process, such as the host range genes VACV-Cop K1L and C12L [16,18]. The 330 recombination of MVA with a multiplication competent OPXV may lead to the restoration of 331 disrupted/deleted genes in MVA. In this study, we observed that two of our recombinant viruses, that 332 had >50% DNA from MVA-HANP, rescued deleted and fragment host range genes, such CXPV-Broog 333 (VACV-Cop C16L) and CPXV-Bro41 (VACV-cop K1L) [23,90]. Even these recombinant viruses gained 334 new host range genes, crmB/CPXV-Br226 (VACV-Cop B28R) and vCD30/CPXV015 [90,91]. The 335 recombination of MVA with a wild OPXV was considered negligent since smallpox was eradicated. 336 However, the circulation of the naturally OPXV [3,57,68,92–94] and the emergence of new OPVX in 337 the last few years [49,95,96], have increased the likelihood of recombination between MVA and a 338 naturally replication competent OPXV during co-infection or superinfection of the same cell or host. For 339 instance, the ongoing global outbreak of Mpox and prophylactic or post-exposure vaccination with 340 MVA-BN provide a good scenario for co-infection/superinfection and subsequent recombination 341 between MVA and MPXV. In addition, several orthopoxvirus outbreaks in humans have been reported 342 worldwide [6,97]. Our study has shown that insertion of the transgene into the genome of a co-infecting 343 or superinfecting OPXV was specific but recombination in other parts of the genome were nonspecific 344 and unpredictable. In addition, some of the progeny viruses lost some or part of the transgenic cassette 345 even when they were inserted into the intended genomic regions, and the loss of transgene may preclude 346 tracking of recombinant viruses. To evaluate the potential for recombination and robust monitoring of 347 potential recombinant viruses, hazard characterization and risk assessment of MVA vectored biologicals 348 should include genome wide characterization.

349 Finally, it is important to highlight the limitations of this study. First, the high moi used in our co-350 infection and superinfection experiments may not be achievable under natural co-351 infection/superinfection. Second, our experiments were done in cell cultures and an extrapolation 352 cannot be made to animals with an intact immune system. Thirdly, our use of selection markers like 353 plaque phenotype, expression or non-expression of the transgene may have introduced a selection bias 354 and thus underestimate the pattern and diversity of recombination between co-infecting or 355 superinfecting viruses. Future studies will address these limitations through metagenomic analysis of 356 cell cultures and animals co-infected or superinfected with MVA and CPXV under conditions that better 357 reflects natural scenario.

# 359 Conclusions

The superinfection exclusion and low permissivity of Vero cells to MVA did not prevent the recombination between MVA vectored vaccines and the naturally circulating CPXV during superinfection of cells. The recombination between MVA-HANP and the naturally circulating CPXV-No-F1 in co-infected and superinfected Vero cells lead to the generation of progeny viruses with novel biological and genetic characteristic as well as the regaining of delete/fragmented genes in MVA-HANP and transfer of the transgene into CPXV.

- 366
- 367

# 368 METHODS:

# 369 **Co-infection and superinfection of Vero cells:**

370 The co-infection and superinfection experiments with MVA vectored influenza vaccine (MVA-HANP) 371 and the naturally circulating Fennoscandian feline cowpox strain (CPXV-No-F1) were performed in Vero 372 cells as previously described [27]. The origin of the cowpox strain was described elsewhere [68]. MVA-373 HANP was kindly provided by Dr. Bernard Moss, National Institutes of Health, USA. MVA-HANP 374 contains the influenza virus HA (A/PR/8/34) and NP gene inserts [98]. MVA-HANP was propagated 375 in BHK-21 cells (ATCC CCL-10). CPXV-No-F1 and recombinant viruses were cultured on Vero cells 376 (ATCC CCL-81). Vero cells and BHK-21 cells were propagated in minimal essential medium (MEM) 377 supplemented with 10% fetal bovine serum (FBS). The cell cultures were maintained in a humidified 5% 378 CO2 atmosphere at 37 °C.

Vero cells are semi-permissive to MVA-HANP [15,20] and permissive to CPXV [76]. Vero cells were coinfected with MVA-HANP and CPXV-No-F1 at a multiplicity of infection (MOI) of 5 infection units per cell for each virus strain. Superinfection with CPXV and MVA-HANP in Vero cells was performed in four experiments. Vero cells were infected with CPXV-No-F1 at a MOI of 5. The infected Vero cells were superinfected with MVA-HANP at same MOI (of 5) after 4-hours (superinfection 1) or 6-hours ppi (superinfection 3). The cells were incubated for 72 hours at 37°C. The same procedure was repeated for superinfection 2 and 4, but the primary infection was with MVA-HANP and the secondary infection with

- 386 CPXV-No-F1 after 4-hours (superinfection 2) or 6-hours ppi (superinfection 4). After 72 hours ppi, the
- 387 cells were harvested, freeze-thawn three times and sonicated.

## 388 Selection of recombinant viruses, plaque purification and immunostaining:

Progeny viruses were identified and selected in Vero Cells. The selection was based on (1) the expression of the Influenza virus HA protein and (2) plaque phenotype. The progeny viruses that formed different plaque phenotype from the parental viruses were selected. The sonicated cells suspensions were inoculated on Vero cells and the progeny viruses were plaque-purified several times before plaque amplification. The stock of the progeny viruses was prepared from plaque purified viruses. The progeny viruses carrying the influenza virus HA protein were detected by immunostaining, as described previously [22]. Moreover, the plaque phenotype of the parental viruses was also examined in Vero cells.

### **396** Genome sequencing, genome assembly and annotation:

397 Viral DNA of the plaque purified progeny viruses and the parental virus MVA-HANP was isolated using 398 QIAGEN Genomic-tip 100/G and QIAGEN Genomic DNA Buffer Set, following the manufacturer's 399 instructions (Qiagen, Hilden, Germany). The genomes were sequenced with Illumina MiSeq (Illumina 400 Inc., San Diego, CA, United States) using reagent kit v3 with 2 × 300 bp paired-end reads and Oxford 401 Nanopore Technology GridION (ONT; Oxford, United Kingdom), as previously described [57]. 402 Nanopore and Illumina library preparation have been described elsewhere [57]. Nanopore sequencing 403 was performed at the Genomics Support Centre Tromsø at UiT-The Arctic University of Norway and 404 Illumina sequencing was conducted by the Norwegian Sequencing Centre, Oslo.

405 The genome assembly was performed using SPAdes v3.15.3 [99]. For the assembly of MVA-HANP, the 406 parameter trusted-contigs and the reference genome MVA were used. The viral genomes were annotated 407 using the Genome Annotation Transfer Utility (GATU) [100], as previously reported [57]. Vaccinia virus 408 Copenhagen (VACV-Cop), Choriollantois vaccinia virus Ankara (CVA) and MVA were used as reference 409 genomes for the genome annotation of MVA-HANP. VACV strains were retrieved from the Viral 410 Orthologous Clusters (VOCs) database [101]. The parental viruses, CPXV-No-F1 411 (Genbank accession number OP125538) and MVA-HANP, were used as reference genomes for the 412 genome annotation of the progeny viruses. The complete genome of the parental CPXV-No-F1 has been 413 published elsewhere [68].

# 414 **Recombination analysis:**

The progeny viral genomes were analyzed for possible recombination events using recombination detection program 4 (RPD4) [102] and SimPlot v3.5.1 [103] as described previously [57]. The progeny virus genomes were aligned to the parental viruses and other CPXV strains (CPXV-Br and CPXV-Gri) with MAFFT v1.4.0 [104] implemented in Geneious Prime 2020.2.4. The CXPV strains were retrieved from the Viral Orthologous Clusters (VOCs) database [101]. The gaps were not removed from the alignments.

421 The recombination events identified by 5 of 7 methods (RDP [105], GENECONV [106], Bootscan [107],

422 MaxChi [108], Chimaera [109], SiScan [110], and  $_{3}Seq$  [111]) with significant p-values (p  $\leq$  0.01) were

423 considered potential recombinant events. Furthermore, the breakpoints in the recombinant genomes

424 were checked manually in the alignments in case both programs could not detect the recombination

426

425

event.

### 427 Availability of data and materials

428 The original contributions presented in the study are publicly available. This data can be found
429 here: https://www.ncbi.nlm.nih.gov/genbank/, XX.

430

### 431 **Funding**

This study was supported by the University of Tromsø, the Arctic University of Norway (project
A212100108) and the National Graduate School in Infection Biology and Antimicrobials (grant no.
249062). Article processing charge was paid UiT - The Arctic University of Norway.

435

### 436 **Author information**

437 Molecular Inflammation Research Group, Department of Medical Biology, UiT - The

438 Arctic University of Norway, Tromsø, Norway

### 439 Diana Diaz-Cánova & Ugo Moens

### 440 Highly Pathogenic Viruses, Centre for Biological Threats and Special Pathogens, WHO

441 Reference Laboratory for SARS-CoV-2 and WHO Collaborating Centre for Emerging

- 442 Infections and Biological Threats, Robert Koch Institute, Berlin, Germany
- 443 Annika Brinkmann & Andreas Nitsche
- 444 Section of Biomedical Sciences, Department of Natural and Environmental Sciences,
- 445 School of Arts and Sciences, American University of Nigeria, Yola, Nigeria
- 446 Malachy Ifeanyi Okeke
- 447

# 448 Contributions

449 DD-C conducted the experiments, analyzed the data, and wrote the manuscript. MIO and UM

450 conceptualized the study, supervised the design and execution of the project, and wrote the manuscript.

- 451 AB and AN contributed to data interpretation and revision of the manuscript for improved intellectual
- 452 content. All authors contributed to the article and approved the submitted version.

453

# 454 **Corresponding authors**

455 \*Correspondence to Ugo Moens or Malachy Ifeanyi Okeke.

456

# 457 **Ethics approval and consent to participate**

458 Not applicable.

459

- 460 **Consent for publication**
- 461 Not applicable.

463	Competing interests
464	The authors declare that they have no competing interests.
465	
466	Keywords
467	orthopoxvirus, poxvirus, smallpox, superinfection exclusion
468	
469	Supplementary information
470	Additional file 1. Supplementary tables.
471	Additional file 2. Fig. S1.
472	
473	References
474	1. Hendrickson RC, Wang C, Hatcher EL, Lefkowitz EJ. Orthopoxvirus Genome Evolution:
475	The Role of Gene Loss. Viruses [Internet]. Multidisciplinary Digital Publishing Institute
476	(MDPI); 2010 [cited 2022 Jan 10];2:1933-67. Available from: /pmc/articles/PMC3185746/
477	2. MacLachlan NJ, Dubovi EJ, editors. Poxviridae. Fenner's Vet Virol [Internet]. Fifth. Boston:
478	Academic Press; 2017 [cited 2022 Jan 10]. p. 157–74. Available from:
479	https://linkinghub.elsevier.com/retrieve/pii/B9780128009468000076
480	3. Silva NIO, de Oliveira JS, Kroon EG, Trindade G de S, Drumond BP. Here, There, and

- 481 Everywhere: The Wide Host Range and Geographic Distribution of Zoonotic Orthopoxviruses.
- 482 Viruses [Internet]. Multidisciplinary Digital Publishing Institute (MDPI); 2021 [cited 2022 Jan
- 483 10];13. Available from: /pmc/articles/PMC7823380/
- 484 4. Vora NM, Li Y, Geleishvili M, Emerson GL, Khmaladze E, Maghlakelidze G, et al. Human

- Infection with a Zoonotic Orthopoxvirus in the Country of Georgia. N Engl J Med [Internet].
  NIH Public Access; 2015 [cited 2022 Jan 10];372:1223. Available from:
  /pmc/articles/PMC4692157/
- 5. Reynolds MG, Guagliardo SAJ, Nakazawa YJ, Doty JB, Mauldin MR. Understanding
  orthopoxvirus host range and evolution: from the enigmatic to the usual suspects. Curr Opin
  Virol. Elsevier; 2018;28:108–15.
- 491 6. Diaz JH. The Disease Ecology, Epidemiology, Clinical Manifestations, Management,
  492 Prevention, and Control of Increasing Human Infections with Animal Orthopoxviruses.
  493 Wilderness Environ Med [Internet]. Elsevier; 2021 [cited 2022 Jan 10];32:528–36. Available
  494 from: http://www.wemjournal.org/article/S1080603221001575/fulltext
- 495 7. Strassburg MA. The global eradication of smallpox. Am J Infect Control. Mosby;
  496 1982;10:53–9.
- 497 8. Jacobs BL, Langland JO, Kibler K V., Denzler KL, White SD, Holechek SA, et al. Vaccinia
  498 Virus Vaccines: Past, Present and Future. Antiviral Res [Internet]. NIH Public Access; 2009
  499 [cited 2022 Mar 31];84:1. Available from: /pmc/articles/PMC2742674/
- 500 9. Sánchez-Sampedro L, Perdiguero B, Mejías-Pérez E, García-Arriaza J, Di Pilato M, Esteban
- 501 M. The evolution of poxvirus vaccines. Viruses. 2015;7.
- 502 10. Mayr A. Smallpox vaccination and bioterrorism with pox viruses. Comp Immunol503 Microbiol Infect Dis. 2003;26.
- 504 11. Pittman PR, Hahn M, Lee HS, Koca C, Samy N, Schmidt D, et al. Phase 3 Efficacy Trial
- of Modified Vaccinia Ankara as a Vaccine against Smallpox. N Engl J Med. 2019;381.
- 506 12. Mahnel H, Mayr A. Experiences with immunization against orthopox viruses of humans
- and animals using vaccine strain MVA. Berl Munch Tierarztl Wochenschr. 1994;107.
- 508 13. Mayr A, Stickl H, Müller HK, Danner K, Singer H. [The smallpox vaccination strain MVA:
- 509 marker, genetic structure, experience gained with the parenteral vaccination and behavior in

- organisms with a debilitated defence mechanism (author's transl)]. Zentralbl Bakteriol B.1978;167.
- 512 14. Mayr A, Hochstein-Mintzel V, Stickl H. Abstammung, Eigenschaften und Verwendung des
  513 attenuierten Vaccinia-Stammes MVA. Infection. 1975;3.
- 514 15. Meyer H, Sutter G, Mayr A. Mapping of deletions in the genome of the highly attenuated
- 515 vaccinia virus MVA and their influence on virulence. J Gen Virol. 1991;72.
- 516 16. Antoine G, Scheiflinger F, Dorner F, Falkner FG. The complete genomic sequence of the
- 517 modified vaccinia Ankara strain: Comparison with other orthopoxviruses. Virology. 1998;244.
- 518 17. Blanchard TJ, Alcamí A, Andrea P, Smith GL. Modified vaccinia virus Ankara undergoes
- 519 limited replication in human cells and lacks several immunomodulatory proteins: Implications
- 520 for use as a human vaccine. J Gen Virol. 1998;79.
- 521 18. Carroll MW, Moss B. Host range and cytopathogenicity of the highly attenuated MVA
- 522 strain of vaccinia virus: Propagation and generation of recombinant viruses in a nonhuman
- 523 mammalian cell line. Virology. 1997;238.
- 524 19. Jordan I, Horn D, Oehmke S, Leendertz FH, Sandig V. Cell lines from the Egyptian fruit
  525 bat are permissive for modified vaccinia Ankara. Virus Res. 2009;145.
- 526 20. Okeke MI, Nilssen Ø, Traavik T. Modified vaccinia virus Ankara multiplies in the rat IEC-
- 527 6 cells and limited production of mature virions occurs in other mammalian cell lines. J Gen528 Virol. 2006;87.
- 529 21. Drexler I, Heller K, Wahren B, Erfle V, Sutter G. Highly attenuated modified vaccinia virus
  530 Ankara replicates in baby hamster kidney cells, a potential host for virus propagation, but not
  531 in various human transformed and primary cells. J Gen Virol. 1998;79.
- 532 22. Hansen H, Okeke MI, Nilssen Ø, Traavik T. Recombinant viruses obtained from co533 infection in vitro with a live vaccinia-vectored influenza vaccine and a naturally occurring
  534 cowpox virus display different plaque phenotypes and loss of the transgene. Vaccine. Elsevier;

- 535 2004;23:499–506.
- 536 23. Peng C, Moss B. Repair of a previously uncharacterized second host-range gene contributes
- 537 to full replication of modified vaccinia virus Ankara (MVA) in human cells. Proc Natl Acad

538 Sci U S A. 2020;117.

- 539 24. Suter M, Meisinger-Henschel C, Tzatzaris M, Hülsemann V, Lukassen S, Wulff NH, et al.
- 540 Modified vaccinia Ankara strains with identical coding sequences actually represent complex
- 541 mixtures of viruses that determine the biological properties of each strain. Vaccine. 2009;27.
- 542 25. Earl PL, Americo JL, Wyatt LS, Espenshade O, Bassler J, Gong K, et al. Rapid protection
- in a monkeypox model by a single injection of a replication-deficient vaccinia virus. Proc Natl
  Acad Sci U S A. 2008;105.
- 545 26. Guerra S, González JM, Climent N, Reyburn H, López-Fernández LA, Nájera JL, et al.
- 546 Selective Induction of Host Genes by MVA-B, a Candidate Vaccine against HIV/AIDS. J Virol.
  547 2010;84.
- 548 27. Okeke MI, Okoli AS, Diaz D, Offor C, Oludotun TG, Tryland M, et al. Hazard 549 characterization of modified vaccinia virus ankara vector: What are the knowledge gaps? 550 Viruses. 2017.
- 551 28. Orlova OV, Glazkova DV, Bogoslovskaya EV, Shipulin GA, Yudin SM. Development of
- Modified Vaccinia Virus Ankara-Based Vaccines: Advantages and Applications. Vaccines.
  MDPI; 2022.
- 29. Joachim A, Nilsson C, Aboud S, Bakari M, Lyamuya EF, Robb ML, et al. Potent functional
  antibody responses elicited by HIV-I DNA priming and boosting with heterologous HIV-1
  recombinant MVA in healthy tanzanian adults. PLoS One. 2015;10.
- 30. Nilsson C, Godoy-Ramirez K, Hejdeman B, Bråve A, Gudmundsdotter L, Hallengärd D, et
  al. Broad and potent cellular and humoral immune responses after a second late HIV-modified
  vaccinia virus ankara vaccination in HIV-DNA-primed and HIV-modified vaccinia virus

- ankara-boosted swedish vaccinees. AIDS Res Hum Retroviruses. 2014;30.
- 31. Milligan ID, Gibani MM, Sewell R, Clutterbuck EA, Campbell D, Plested E, et al. Safety
  and immunogenicity of novel adenovirus type 26-and modified vaccinia Ankara-vectored
  Ebola vaccines: A randomized clinical trial. JAMA J Am Med Assoc. 2016;315.
- 564 32. Tapia MD, Sow SO, Lyke KE, Haidara FC, Diallo F, Doumbia M, et al. Use of ChAd3-
- 565 EBO-Z Ebola virus vaccine in Malian and US adults, and boosting of Malian adults with MVA-
- BN-Filo: a phase 1, single-blind, randomised trial, a phase 1b, open-label and double-blind,
  dose-escalation trial, and a nested, randomised, double-blind, placebo-controlled trial. Lancet
- 568 Infect Dis. 2016;16.
- 569 33. Callendret B, Vellinga J, Wunderlich K, Rodriguez A, Steigerwald R, Dirmeier U, et al. A
- 570 prophylactic multivalent vaccine against different filovirus species is immunogenic and
- provides protection from lethal infections with Ebolavirus and Marburgvirus species in non-human primates. PLoS One. 2018;13.
- 573 34. Fuentes S, Ravichandran S, Coyle EM, Klenow L, Khurana S. Human Antibody Repertoire
  574 following Ebola Virus Infection and Vaccination. iScience. 2020;23.
- 575 35. Jordan E, Lawrence SJ, Meyer TPH, Schmidt D, Schultz S, Mueller J, et al. Broad Antibody
- and Cellular Immune Response from a Phase 2 Clinical Trial with a Novel Multivalent
  Poxvirus-Based Respiratory Syncytial Virus Vaccine. J Infect Dis. 2021;223.
- 578 36. Koch T, Dahlke C, Fathi A, Kupke A, Krähling V, Okba NMA, et al. Safety and
- 579 immunogenicity of a modified vaccinia virus Ankara vector vaccine candidate for Middle East
- 580 respiratory syndrome: an open-label, phase 1 trial. Lancet Infect Dis. 2020;20.
- 581 37. Aldoss I, la Rosa C, Baden LR, Longmate J, Ariza-Heredia EJ, Rida WN, et al. Poxvirus
- 582 vectored cytomegalovirus vaccine to prevent cytomegalovirus viremia in transplant recipients:
- 583 A phase 2, randomized clinical trial. Ann Intern Med. 2020;172.
- 584 38. Kreijtz JHCM, Goeijenbier M, Moesker FM, van den Dries L, Goeijenbier S, De Gruyter

HLM, et al. Safety and immunogenicity of a modified-vaccinia-virus-Ankara-based influenza
A H5N1 vaccine: A randomised, double-blind phase 1/2a clinical trial. Lancet Infect Dis.
2014;14.

39. Puksuriwong S, Ahmed MS, Sharma R, Krishnan M, Leong S, Lambe T, et al. Modified
vaccinia Ankara-vectored vaccine expressing nucleoprotein and matrix protein 1 (M1) activates
mucosal M1-specific T-Cell immunity and tissue-resident memory T Cells in human
nasopharynx-associated lymphoid tissue. J Infect Dis. 2020;222.

40. Tameris MD, Hatherill M, Landry BS, Scriba TJ, Snowden MA, Lockhart S, et al. Safety
and efficacy of MVA85A, a new tuberculosis vaccine, in infants previously vaccinated with
BCG: A randomised, placebo-controlled phase 2b trial. Lancet. 2013;381.

41. Hodgson SH, Ewer KJ, Bliss CM, Edwards NJ, Rampling T, Anagnostou NA, et al.
Evaluation of the efficacy of ChAd63-MVA vectored vaccines expressing circumsporozoite
protein and ME-TRAP against controlled human malaria infection in malaria-naive individuals.
J Infect Dis. 2015.

42. Biswas S, Choudhary P, Elias SC, Miura K, Milne KH, De Cassan SC, et al. Assessment of
humoral immune responses to blood-stage malaria antigens following ChAd63-MVA
immunization, controlled human malaria infection and natural exposure. PLoS One. 2014;9.

43. Sebastian S, Gilbert SC. Recombinant modified vaccinia virus Ankara-based malaria
vaccines. Expert Rev. Vaccines. 2016.

44. European Medicines Agency. EMA recommends approval of Imvanex for the prevention
of monkeypox disease [Internet]. 2022 [cited 2023 Jan 1]. Available from:
https://www.ema.europa.eu/en/news/ema-recommends-approval-imvanex-prevention-

607 monkeypox-disease

45. U.S. Food and Drugs. Vaccines Licensed for Use in the United States [Internet]. 2022.

609 Available from: https://www.fda.gov/vaccines-blood-biologics/vaccines/vaccines-licensed-

- 610 use-united-states
- 611 46. Goossens M, Pauwels K, Willemarck N, Breyer D. Environmental Risk Assessment of
- 612 Clinical Trials Involving Modified Vaccinia Virus Ankara (MVA)-Based Vectors. Curr Gene613 Ther. 2014;13.
- 47. Coulson D, Upton C. Characterization of indels in poxvirus genomes. Virus Genes
  [Internet]. Springer; 2011 [cited 2022 Jan 10];42:171–7. Available from:
  https://link.springer.com/article/10.1007/s11262-010-0560-x
- 617 48. Franke A, Pfaff F, Jenckel M, Hoffmann B, Höper D, Antwerpen M, et al. Classification of
- 618 cowpox viruses into several distinct clades and identification of a novel lineage. Viruses.
  619 2017;9:1–14.
- 49. Gao J, Gigante C, Khmaladze E, Liu P, Tang S, Wilkins K, et al. Genome sequences of
  Akhmeta virus, an early divergent old world orthopoxvirus. Viruses. 2018;10.
- 622 50. Gigante CM, Gao J, Tang S, McCollum AM, Wilkins K, Reynolds MG, et al. Genome of
- Alaskapox Virus, a Novel Orthopoxvirus Isolated from Alaska. Viruses [Internet].
  Multidisciplinary Digital Publishing Institute (MDPI); 2019 [cited 2022 Jan 10];11. Available
- 625 from: /pmc/articles/PMC6723315/
- 626 51. Gubser C, Hué S, Kellam P, Smith GL. Poxvirus genomes: A phylogenetic analysis. J Gen
- 627 Virol [Internet]. Microbiology Society; 2004 [cited 2022 Jan 10];85:105–17. Available from:
- 628 https://www.microbiologyresearch.org/content/journal/jgv/10.1099/vir.0.19565-0
- 629 52. Qin L, Evans DH. Genome Scale Patterns of Recombination between Coinfecting Vaccinia
- 630 Viruses. J Virol. 2014;88:5277–86.
- 631 53. Qin L, Upton C, Hazes B, Evans DH. Genomic Analysis of the Vaccinia Virus Strain
- 632 Variants Found in Dryvax Vaccine. J Virol [Internet]. American Society for Microbiology
- 633 (ASM); 2011 [cited 2022 Jan 10];85:13049. Available from: /pmc/articles/PMC3233142/
- 634 54. Qin L, Favis N, Famulski J, Evans DH. Evolution of and Evolutionary Relationships

- 635 between Extant Vaccinia Virus Strains. J Virol [Internet]. American Society for Microbiology
- 636 (ASM); 2015 [cited 2022 Jan 10];89:1809. Available from: /pmc/articles/PMC4300770/
- 637 55. Smithson C, Meyer H, Gigante CM, Gao J, Zhao H, Batra D, et al. Two novel poxviruses
- 638 with unusual genome rearrangements: NY 014 and Murmansk. Virus Genes [Internet].
- 639 Springer New York LLC; 2017 [cited 2022 Jan 10];53:883–97. Available from:
- 640 https://link.springer.com/article/10.1007/s11262-017-1501-8
- 641 56. Smithson C, Purdy A, Verster AJ, Upton C. Prediction of Steps in the Evolution of Variola
- 642 Virus Host Range. PLoS One [Internet]. Public Library of Science; 2014 [cited 2022 Jan
- 64310];9:e91520.Availablefrom:
- 644 https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0091520
- 645 57. Diaz-Cánova D, Moens UL, Brinkmann A, Nitsche A, Okeke MI. Genomic Sequencing
- and Analysis of a Novel Human Cowpox Virus With Mosaic Sequences From North America
- 647 and Old World Orthopoxvirus. Front Microbiol [Internet]. Frontiers Media SA; 2022 [cited
- 648 2022 May 23];13. Available from: /pmc/articles/PMC9112427/
- 58. Doceul V, Hollinshead M, Van Der Linden L, Smith GL. Repulsion of superinfecting
  virions: A mechanism for rapid virus spread. Science (80-). 2010;327.
- 59. Laliberte JP, Moss B. A Novel Mode of Poxvirus Superinfection Exclusion That Prevents
  Fusion of the Lipid Bilayers of Viral and Cellular Membranes. J Virol. 2014;88.
- 653 60. Campe H, Zimmermann P, Glos K, Bayer M, Bergemann H, Dreweck C, et al. Cowpox
- 654 Virus Transmission from Pet Rats to Humans, Germany. Emerg Infect Dis [Internet]. Centers
- for Disease Control and Prevention; 2009 [cited 2022 Jan 10];15:777. Available from:
  /pmc/articles/PMC2687013/
- 657 61. Ducournau C, Ferrier-Rembert A, Ferraris O, Joffre A, Favier AL, Flusin O, et al.
- 658 Concomitant human infections with 2 cowpox virus strains in related cases, France, 2011.
- Emerg Infect Dis. 2013;19.

- 660 62. Gazzani P, Gach JE, Colmenero I, Martin J, Morton H, Brown K, et al. Fatal disseminated
- 661 cowpox virus infection in an adolescent renal transplant recipient. Pediatr Nephrol. 2017;32.
- 662 63. Andreani J, Arnault JP, Bou Khalil JY, Abrahão J, Tomei E, Vial E, et al. Atypical cowpox
- virus infection in smallpox-vaccinated patient, France. Emerg Infect Dis. 2019;25.
- 664 64. Ferrier A, Frenois-Veyrat G, Schvoerer E, Henard S, Jarjaval F, Drouet I, et al. Fatal cowpox
- virus infection in human fetus, france, 2017. Emerg Infect Dis. 2021;27:2570–7.
- 666 65. Krankowska DC, Woźniak PA, Cybula A, Izdebska J, Suchacz M, Samelska K, et al.
- 667 Cowpox: How dangerous could it be for humans? Case report. Int J Infect Dis. 2021;104.
- 668 66. Tryland M, Myrmel H, Holtet L, Haukenes G, Traavik T. Clinical cowpox cases in Norway.
- 669 Scand J Infect Dis. 1998;30:301–3.
- 670 67. Okeke MI, Hansen H, Traavik T. A naturally occurring cowpox virus with an ectromelia
- 671 virus A-type inclusion protein gene displays atypical A-type inclusions. Infect Genet Evol.
  672 Elsevier; 2012;12:160–8.
- 673 68. Diaz-Cánova D, Mavian C, Brinkmann A, Nitsche A, Moens U, Okeke MI. Genomic
- 674 Sequencing and Phylogenomics of Cowpox Virus. Viruses 2022, Vol 14, Page 2134 [Internet].
- 675 Multidisciplinary Digital Publishing Institute; 2022 [cited 2022 Oct 12];14:2134. Available
- 676 from: https://www.mdpi.com/1999-4915/14/10/2134/htm
- 677 69. WHO. 2022 Mpox (Monkeypox) Outbreak: Global Trends [Internet]. 2023. Available from:
  678 https://worldhealthorg.shinyapps.io/mpx\_global/
- 679 70. Hansen H, Okeke MI, Nilssen Ø, Traavik T. Comparison and phylogenetic analysis of
  680 cowpox viruses isolated from cats and humans in Fennoscandia. Arch Virol [Internet]. Springer;
- 681
   2009
   [cited
   2022
   Jan
   10];154:1293–302.
   Available
   from:
- 682 https://link.springer.com/article/10.1007/s00705-009-0442-5
- 683 71. Sutter G, Moss B. Nonreplicating vaccinia vector efficiently expresses recombinant genes.
- 684 Proc Natl Acad Sci U S A. 1992;89.

- 685 72. Evans DH, Stuart D, McFadden G. High levels of genetic recombination among
  686 cotransfected plasmid DNAs in poxvirus-infected mammalian cells. J Virol. 1988;62.
- 687 73. Willer DO, Mann MJ, Zhang W, Evans DH. Vaccinia virus DNA polymerase promotes
  688 DNA pairing and strand-transfer reactions. Virology. 1999;257.
- 689 74. Tolonen N, Doglio L, Schleich S, Krijnse Locker J. Vaccinia virus DNA replication occurs
- 690 in endoplasmic reticulum-enclosed cytoplasmic mini-nuclei. Mol Biol Cell. 2001;12.
- 691 75. Christen L, Seto J, Niles EG. Superinfection exclusion of vaccinia virus in virus-infected692 cell cultures. Virology. 1990;174.
- 693 76. Okeke MI, Nilssen I, Moens U, Tryland M, Traavik T. In vitro host range, multiplication
- and virion forms of recombinant viruses obtained from co-infection in vitro with a vaccinia-
- 695 vectored influenza vaccine and a naturally occurring cowpox virus isolate. Virol J. 2009;6.
- 696 77. Dobson BM, Procter DJ, Hollett NA, Flesch IEA, Newsome TP, Tscharke DC. Vaccinia
- 697 virus F5 is required for normal plaque morphology in multiple cell lines but not replication in
- culture or virulence in mice. Virology. 2014;456–457.
- 699 78. Dobson BM, Tscharke DC. Truncation of gene F5L partially masks rescue of vaccinia virus
- strain MVA growth on mammalian cells by restricting plaque size. J Gen Virol. 2014;95.
- 701 79. Morales I, Carbajal MA, Bohn S, Holzer D, Kato SEM, Greco FAB, et al. The vaccinia
- virus F11L gene product facilitates cell detachment and promotes migration. Traffic. 2008;9.
- 80. Blasco R, Sisler JR, Moss B. Dissociation of progeny vaccinia virus from the cell membrane
- is regulated by a viral envelope glycoprotein: effect of a point mutation in the lectin homology
- domain of the A34R gene. J Virol. 1993;67.
- 706 81. Roper RL, Wolffe EJ, Weisberg A, Moss B. The Envelope Protein Encoded by the A33R
- 707 Gene Is Required for Formation of Actin-Containing Microvilli and Efficient Cell-to-Cell
- 708 Spread of Vaccinia Virus. J Virol. 1998;72.
- 709 82. Zhang W-H, Wilcock D, Smith GL. Vaccinia Virus F12L Protein Is Required for Actin Tail

- 710 Formation, Normal Plaque Size, and Virulence. J Virol. 2000;74.
- 711 83. Parkinson JE, Smith GL. Vaccinia virus gene A36R encodes a M(r) 43-50 K protein on the
- surface of extracellular enveloped virus. Virology. 1994;204.
- 713 84. Katz E, Wolffe E, Moss B. Identification of Second-Site Mutations That Enhance Release
- and Spread of Vaccinia Virus. J Virol. 2002;76.
- 715 85. Zhou J, Sun XY, Fernando GJP, Frazer IH. The vaccinia virus K2L gene encodes a serine
- 716 protease inhibitor which inhibits cell-cell fusion. Virology. 1992;189.
- 717 86. Law KM, Smith GL. A vaccinia serine protease inhibitor which prevents virus-induced cell
- 718 fusion. J Gen Virol. 1992;73.
- 719 87. Turner PC, Moyer RW. An orthopoxvirus serpinlike gene controls the ability of infected720 cells to fuse. J Virol. 1992;66.
- 721 88. Firth C, Kitchen A, Shapiro B, Suchard MA, Holmes EC, Rambaut A. Using Time-
- 722 Structured Data to Estimate Evolutionary Rates of Double-Stranded DNA Viruses. Mol Biol
- Evol [Internet]. Oxford Academic; 2010 [cited 2022 Apr 5];27:2038–51. Available from:
- 724 https://academic.oup.com/mbe/article/27/9/2038/1008481
- 89. de Haven BC, Gupta K, Isaacs SN. The vaccinia virus A56 protein: A multifunctional
  transmembrane glycoprotein that anchors two secreted viral proteins. J. Gen. Virol. 2011.
- 727 90. Bratke KA, McLysaght A, Rothenburg S. A survey of host range genes in poxvirus
- genomes. Infect Genet Evol [Internet]. 2013;14:406–25. Available from:
  http://dx.doi.org/10.1016/j.meegid.2012.12.002
- 730 91. Panus JF, Smith CA, Ray CA, Smith TD, Patel DD, Pickup DJ. Cowpox virus encodes a
- 731 fifth member of the tumor necrosis factor receptor family: A soluble, secreted CD30
  732 homologue. Proc Natl Acad Sci U S A. 2002;99.
- 92. Abrahão JS, Campos RK, De Souza Trindade G, Da Fonseca FG, Ferreira PCP, Kroon EG.
- 734 Outbreak of Severe Zoonotic Vaccinia Virus Infection, Southeastern Brazil. Emerg Infect Dis

- [Internet]. Centers for Disease Control and Prevention; 2015 [cited 2022 Jan 10];21:695.
  Available from: /pmc/articles/PMC4378504/
- 93. Kalthan E, Tenguere J, Ndjapou SG, Koyazengbe TA, Mbomba J, Marada RM, et al.
  Investigation of an outbreak of monkeypox in an area occupied by armed groups, Central
  African Republic. Médecine Mal Infect. Elsevier Masson; 2018;48:263–8.
- 94. Alakunle E, Moens U, Nchinda G, Okeke MI. Monkeypox Virus in Nigeria: Infection
  Biology, Epidemiology, and Evolution. Viruses [Internet]. Multidisciplinary Digital Publishing
- 742Institute (MDPI); 2020 [cited 2022 Jan 12];12. Available from: /pmc/articles/PMC7694534/
- 743 95. Cardeti G, Gruber CEM, Eleni C, Carletti F, Castilletti C, Manna G, et al. Fatal Outbreak
- in Tonkean Macaques Caused by Possibly Novel Orthopoxvirus, Italy, January 2015 Volume
- 745 23, Number 12—December 2017 Emerging Infectious Diseases journal CDC. Emerg Infect

746 Dis [Internet]. Centers for Disease Control and Prevention (CDC); 2017 [cited 2022 Jan

- 10];23:1941–9. Available from: https://wwwnc.cdc.gov/eid/article/23/12/16-2098\_article
- 96. Springer YP, Hsu CH, Werle ZR, Olson LE, Cooper MP, Castrodale LJ, et al. Novel
  Orthopoxvirus Infection in an Alaska Resident. Clin Infect Dis An Off Publ Infect Dis Soc Am
  [Internet]. Oxford University Press; 2017 [cited 2022 Jan 10];64:1737. Available from:
  /pmc/articles/PMC5447873/
- 97. Alakunle E, Okeke M. Monkeypox virus: a neglected zoonotic pathogen spreads globally.
  Nat Rev Microbiol. 2022;20:507–8.
- 98. Sutter G, Wyatt LS, Foley PL, Bennink JR, Moss B. A recombinant vector derived from
  the host range-restricted and highly attenuated MVA strain of vaccinia virus stimulates
  protective immunity in mice to influenza virus. Vaccine. Elsevier; 1994;12:1032–40.
- 757 99. Bankevich A, Nurk S, Antipov D, Gurevich AA, Dvorkin M, Kulikov AS, et al. SPAdes:
- 758 A New Genome Assembly Algorithm and Its Applications to Single-Cell Sequencing
- [Internet]. J. Comput. Biol. Mary Ann Liebert, Inc.; 2012 [cited 2022 Jan 10]. p. 477. Available

760 from: /pmc/articles/PMC3342519/

100. Tcherepanov V, Ehlers A, Upton C. Genome Annotation Transfer Utility (GATU): rapid
annotation of viral genomes using a closely related reference genome [Internet]. BMC
Genomics. BioMed Central; 2006 [cited 2022 Jan 10]. p. 150. Available from:
/pmc/articles/PMC1534038/

101. Ehlers A, Osborne J, Slack S, Roper RL, Upton C. Poxvirus Orthologous Clusters (POCs)

[Internet]. Bioinformatics. Oxford Academic; 2002 [cited 2022 Jan 10]. p. 1544–5. Available
from: https://academic.oup.com/bioinformatics/article/18/11/1544/178349

102. Martin DP, Murrell B, Golden M, Khoosal A, Muhire B. RDP4: Detection and analysis of
 recombination patterns in virus genomes [Internet]. Virus Evol. Oxford Academic; 2015 [cited

770 2021 Mar 2]. Available from: https://academic.oup.com/ve/article/1/1/vev003/2568683

103. Lole KS, Bollinger RC, Paranjape RS, Gadkari D, Kulkarni SS, Novak NG, et al. FullLength Human Immunodeficiency Virus Type 1 Genomes from Subtype C-Infected
Seroconverters in India, with Evidence of Intersubtype Recombination [Internet]. J. Virol.
American Society for Microbiology (ASM); 1999 [cited 2021 Mar 2]. p. 160. Available from:

775 /pmc/articles/PMC103818/

104. Katoh K, Standley DM. MAFFT Multiple Sequence Alignment Software Version 7:
Improvements in Performance and Usability [Internet]. Mol. Biol. Evol. Oxford University

778 Press; 2013 [cited 2022 Jan 10]. p. 772–80. Available from: /pmc/articles/PMC3603318/

105. Martin D, Rybicki E. RDP: detection of recombination amongst aligned sequences

780 [Internet]. Bioinformatics. Oxford Academic; 2000 [cited 2022 Jan 10]. p. 562–3. Available

781 from: https://academic.oup.com/bioinformatics/article/16/6/562/178152

- 106. Padidam M, Sawyer S, Fauquet CM. Possible Emergence of New Geminiviruses by
- 783 Frequent Recombination. Virology. Academic Press; 1999. p. 218–25.
- 107. Martin DP, Posada D, Crandall KA, Williamson C. A Modified Bootscan Algorithm for
Automated Identification of Recombinant Sequences and Recombination Breakpoints
[Internet]. https://home.liebertpub.com/aid. Mary Ann Liebert, Inc. 2 Madison Avenue
Larchmont, NY 10538 USA; 2005 [cited 2022 Jan 10]. p. 98–102. Available from:
https://www.liebertpub.com/doi/abs/10.1089/aid.2005.21.98

108. Smith JM. Analyzing the mosaic structure of genes [Internet]. J. Mol. Evol. 1992 342.
Springer; 1992 [cited 2022 Jan 10]. p. 126–9. Available from: https://link.springer.com/article/10.1007/BF00182389

792 109. Posada D, Crandall KA. Evaluation of methods for detecting recombination from DNA 793 sequences: Computer simulations [Internet]. Proc. Natl. Acad. Sci. National Academy of 794 Sciences; 2001 [cited] 2022 Jan 10]. p. 13757-62. Available from: 795 https://www.pnas.org/content/98/24/13757

110. Gibbs MJ, Armstrong JS, Gibbs AJ. Sister-Scanning: a Monte Carlo procedure for
assessing signals in recombinant sequences [Internet]. Bioinformatics. Oxford Academic; 2000
[cited 2022 Jan 10]. p. 573–82. Available from:
https://academic.oup.com/bioinformatics/article/16/7/573/227862

800 111. Boni MF, Posada D, Feldman MW. An Exact Nonparametric Method for Inferring Mosaic

801 Structure in Sequence Triplets [Internet]. Genetics. Oxford Academic; 2007 [cited 2022 Jan

802 10]. p. 1035–47. Available from:

803 https://academic.oup.com/genetics/article/176/2/1035/6064558

804

					CPXV-No-F1				V	ACV-MVA-HAN	NP	
Function	VACV-Cor	CPXV-Br 🔻	CDS 🔻	Start 🔻	Stop 🔻	Length	v Directio v	CDS .	Start -	Stop 👻	Length 🔻	Direction •
CPV-B-002	-	CPXV002	NoF1-001	894	1121	228	reverse	-				
Chemokine binding protein (Cop-C23L)	B29R/C23L	vCCI/CPXV003	NoF1-002	1150	1887	738	reverse	MVA-HANP-001 f	6485	6895	411	reverse
CPV-B-004	-	CXPV004			overlap			-				
TNF receptor (CrmB) (Cop-C22L)	B28R/C22L	crmB/CPXV005	NoF1-003	1961	3034	1074	reverse	-				
Ankyrin (Cop-C19L)	B25R/C19L	CPXV006	NoF1-004	3112	4878	1767	reverse	MVA-HANP-002 f	7327	7857	531	reverse
Ankyrin-like repeat containing protein	-	CPXV007	NoF1-005	4960	5049	90	reverse	-				
	B24R/C18L							MVA-HANP-003 f	8378	8515	138	reverse
Ankyrin (Cop-C17L)		CPXV008	NoF1-006	5089	7095	2007	reverse	MVA-HAND-004 f	8545	8853	309	reverse
	B23R/C17L	01111000	1101 1 000	5007	1075	2007	ie rense	MWA-HANF-004	0040	8855	309	leverse
	010	CD1/1/000/CD1/1/202	N E1 007	7210	2221	162		MVA-HANP-005	8930	9631	702	reverse
Hypothetical protein (Cop-C16L)	C16L	CPXV009/CPXV222	NoF1-007	7310	77/1	462	reverse	-				
Alpha amanatin target protein (Cop-N2L)	N2L	CPXV010	NOF1-008	7942	8595	654	reverse	-				
Ankurin (Con P20P)	- P20P		NoF1-009	0908	9301	2016	reverse	-				
C true leatin demoin containing motoin	620K	CPXV011 CPXV012	NoF1-010 NoF1-011	9626	11045	2010	reverse	-				
PTP Keleb domain containing protein PTP Keleb domain containing protein: CPL complex (Con A55P)	- 455D	CPXV012 CPXV012	NoF1-011 NoF1-012	12070	12219	612	reverse	-				
TNE recentor (CrmB) (Con-C221)	C22I	CPXV013	NoF1-012	13303	14001	609	reverse	-				
TNF-alpha recentor like protein	C22L	vCD30/CPXV014	NoF1-013	13998	14330	333	reverse					
Ankyrin (Con-B18R)	B18R	CPXV016	NoF1-015	14405	16708	2304	reverse					
Ankyrin (CPXV-017)	-	CPXV010 CPXV017	NoF1-016	16984	18291	1308	reverse	-				
MPV-Z-N3R	-	CPXV018	NoF1-017	18390	18905	516	reverse	-				
Ankvrin (Cop-B18R)	B18R	CPXV019	NoF1-018	18968	21583	2616	reverse	-				
Host range protein	-	CPXV020	NoF1-019	21631	22149	519	reverse	-				
Secreted EGF-like protein (Cop-C11R)	C11R	VGF/CPXV021	NoF1-020	22316	22741	426	forward	MVA-HANP-006	10276	10698	423	forward
IL-1 receptor antagonist (Cop-C10L)	C10L	CPXV022	NoF1-021	22894	23889	996	reverse	MVA-HANP-007	10851	11831	981	reverse
Zinc finger-like protein	-	CPXV023	NoF1-022	24404	25132	729	forward	MVA-HANP-008 f	12336	12611	276	forward
Soluble IL-18 binding protein (Bsh-D7L)	-	CPXV024	NoF1-023	25281	25661	381	reverse	MVA-HANP-009	13125	13487	363	reverse
								MVA-HANP-010 <sup>f</sup>	13546	13818	273	reverse
								MVA-HANP-011 f	13831	14259	429	reverse
Ankyrin/Host Range (Bang-D&L)	_	VHR1/CPXV025	NoF1-024	25720	27735	2016	reverse	MVA HAND 012 f	1/2/19	14755	408	reverse
								MUA-HAND 012	14004	14755	408	1010150
								MVA-HANP-013	14984	15232	249	leverse
								MVA-HANP-014	15278	15493	216	reverse
ANK-containing protein	-	CPXV026	NoF1-025	27849	28040	192	reverse	MVA-HANP-015	15597	15776	180	reverse
								MVA-HANP-016	15949	16278	330	reverse
Ankyrin; Type I IFN resistance (Cop-C9L)	C9L	CPXV027	NoF1-026	28214	30118	1905	reverse	MVA-HANP-017 <sup>f</sup>	16569	16859	291	reverse
								MVA-HANP-018 f	16939	17832	894	reverse
Unknown (Cop-C8L)	C8L	CPXV028	NoF1-027	30160	30717	558	reverse	MVA-HANP-019	17875	18408	534	reverse
Type 1 IFN inhibitor (Cop-C7L)	C7L	CPXV029	NoF1-028	30789	31241	453	reverse	MVA-HANP-020	18480	18932	453	reverse
Bcl-2-like protein, IFN-beta inhibitor (Cop-C6L )	C6L	CPXV030	NoF1-029	31472	31939	468	reverse	MVA-HANP-021	19141	19614	474	reverse
Kelch-like protein (Cop-C5L)	C5L	CPXV031			overlap	•		-				
Kelch-like protein (Cop-C5L)	C5L	CPXV032	NoF1-030	32272	32649	378	reverse	-				
IL-1 receptor antagonist (Cop-C10L)	C4L	CPXV033	NoF1-031	32710	33657	948	reverse	-				
Complement binding (secreted) (Cop-C3L)	C3L	CPXV034	NoF1-032	33724	34518	795	reverse	-				
POZ/BTB Kelch domain protein (Cop-C2L)	C2L	CPXV035	NoF1-033	34581	36119	1539	reverse	-				
Putative TLR signalling inhibitor (Cop-C1L)	CIL	CPXV036	NoF1-034	36188	36826	639	reverse		<u> </u>			
Anti-apoptotic Bcl-2-like protein (Cop-N1L)	N1L	CPXV037	NoF1-035	36868	37221	354	reverse	MVA-HANP-022 <sup>f</sup>	19757	20098	342	reverse
Alpha amanatin target protein (Cop-N2L)	N2L	CPXV038	NoF1-036	37343	37873	531	reverse	MVA-HANP-023	20217	20729	513	reverse
ANK-containing protein; apoptosis inihibitor (Cop-M1L)	M1L	CPXV039	NoF1-037	37916	39331	1416	reverse	-				
NFkB inhibitor (Cop-M2L)	1 M2L	CPXV040	NoF1-038	39309	39971	663	reverse	-	1		1	1

Supplementary Table 1. Predicted coding sequences (CDS) in CPXV-No-F1 and MVA-HANP compared to reference genomes CPXV-Brighton (CPXV\_BR) and VACV-Copenhagen (VACV-Cop).

	** • *	ODVING 11						f				
Ankyrin/NFkB inhibitor (Cop-K1L)	KIL	CPXV041	NoF1-039	40095	40952	858	reverse	MVA-HANP-024	20758	21054	297	reverse
Serpin 1,2,3 (Cop-K2L)	K2L	SPI3/CPXV042	NoF1-040	41310	42431	1122	reverse	MVA-HANP-025	21260	22369	1110	reverse
IFN resistance, PKR/eIF-alpha inhibitor (Cop-K3 L)	K3L	CPXV043	NoF1-041	42482	42748	267	reverse	MVA-HANP-026	22419	22685	267	reverse
Phospholinase-D-like protein (Con-K4L)	K4L	CPXV044	NoF1-042	42808	44082	1275	reverse	MVA-HANP-027	22737	24011	1275	reverse
	V 51							NUL HAND coof	24020	0.4551	510	
Monoglyceride lipase (Cop-K5L/K6L)	KJL	CPXV045	NoF1-043	44110	44940	831	reverse	MVA-HANP-028	24039	24551	513	reverse
	K6L							MVA-HANP-029 <sup>r</sup>	24573	24767	195	reverse
Host immune response repressor (Cop-K7R)	K7R	CPXV046	NoF1-044	45078	45527	450	forward	MVA-HANP-030	24937	25386	450	forward
CPV-B-047	-	CPXV047			overlap			-				
Caspase-9 (apontosis) inhibitor (mitochondrial-associated) (Con-F1L)	F1L	CPXV048	NoF1-045	45601	46344	744	reverse	MVA-HANP-031	25451	26119	669	reverse
durpase (Con-F21)	F2I	CPYV049	NoE1 046	46344	46787	444	reverse	MVA HAND 032	26131	26574	444	reverse
Welsh like protein (Con F2L)	F2L	CDXV050	NoF1-040	40344	40767	1442	ieverse	MVA-HAND 022	26509	20074	1421	Teverse
Reich-like protein (Cop-F5L)	F3L	CPXV050	NOF1-047	40811	48233	1445	reverse	MVA-HANP-035	20398	28028	1451	reverse
Kibonucleotide reductase small subunit (Cop-F4L)	F4L	CPAV051	N0F1-048	48264	49265	1002	reverse	MVA-HANP-034	28039	28998	960	reverse
36kDa major membrana protain (Con-F51)	E5I	CPXV052	NoE1 049	49255	50220	966	reverse	MVA-HANP-035	29030	29323	294	reverse
Sokba major memorane protein (Cop-TSE)	15L	CI XV052	11011-049	47233	50220	500	icverse	MVA-HANP-036 <sup>f</sup>	29292	29948	657	reverse
Hypothetical protein (Con-F6L)	F6L	CPXV053	NoF1-050	50250	50465	216	reverse	MVA-HANP-037	29978	30202	225	reverse
Hypothetical protein (Con-F7L)	F7I	CPYV054	NoE1 051	50/181	50726	246	reverse	MVA HAND 038	30218	30460	2/3	reverse
Cytoplachia protein (Cop F91)	EQI	CPXV055	NoE1 052	51002	51200	108	reverse	MVA HAND 020	30607	20804	108	reverse
C S hand formation and the sector (Con FOL)	FOL	CPXV055	NoF1-052	51005	51200	198	leverse	MUA-HAND 040	30007	30804	170	IEVEISE
S-S bond formation pathway protein substrate (Cop-F9L)	F9L	CPXV056	NoF1-055	51261	51899	639	reverse	MVA-HANP-040	30864	31502	639	reverse
Essential Ser[Thr kinase morph (Cop-F10L)	F10L	CPXV057	NoF1-054	51886	53205	1320	reverse	MVA-HANP-041	31489	32808	1320	reverse
VV_Cop-F ORF D	-	CPXV058			overlap	1		=				
	<b>F111</b>	CD1/050						MVA-HANP-042 <sup>f</sup>	32831	33085	255	reverse
knoA signalling inhibitor, virus release protei n (Cop-F11L)	FIIL	CPXV059	NoE1 055	53778	54292	1065	reverse	MVA HAND 043 f	33542	33844	303	reverse
FEV meturation protain (Con F121)	ELOI	CBVV060	NoE1 055	54225	56220	1005	reverse	MVA HAND 044	22997	25704	1008	reverse
EEV maturation protein (Cop-F12E)	FIZE	CFAV000	NOF1-050	54333	57201	1903	leverse	MVA-HANF-044	35001	35794	1908	leveise
Paimitylated EEV memorane glycoprotein (Cop-F13 L)	FISL	CPXV061	NoF1-057	56273	57391	1119	reverse	MVA-HANP-045	35821	36939	1119	reverse
Unknown (Cop-F14L)	F14L	CPXV062	NoF1-058	57409	57630	222	reverse	MVA-HANP-046	36957	3/1/8	222	reverse
IMV protein (Cop-F14.5L)	F14.5L	62.5	-					MVA-HANP-047	37228	37377	150	reverse
CPV-B-063	-	CPXV063	NoF1-059	57677	57835	159	forward	-				
Unknown conserved protein (Cop-F15L)	F15L	CPXV064	NoF1-060	57903	58379	477	reverse	MVA-HANP-048	37450	37926	477	reverse
Non-functional Serine Recombinase (Cop-F16L)	F16L	CPXV065	NoF1-061	58379	59080	702	reverse	MVA-HANP-049	37933	38628	696	reverse
DNA-binding phosphoprotein (VP11); mTOR antagon ist (Cop-F17R)	F17R	CPXV066	NoF1-062	59143	59448	306	forward	MVA-HANP-050	38692	38997	306	forward
Poly (A) polymerase catalytic subunit (VP55) (Cop-E1L)	E1L.	CPXV067	NoF1-063	59445	60884	1440	reverse	MVA-HANP-051	38994	40433	1440	reverse
IFV morphogenesis (Con-F2I)	F2I	CPYV068	NoE1 064	60881	63094	2214	reverse	MVA HAND 052	40430	42643	2214	reverse
deDNA hinding protein IEN registeree/DKD inhibitor/7 DNA hinding)	E2L E2I	CPXV060	NoE1 065	62225	62707	572	reverse	MVA HAND 052	40430	42243	572	reverse
DNA nehmenose submit (DDO20) (Can E41)	E4L	CPXV009	NoF1-005	62952	64627	796	leverse	MVA HAND 054	42770	43342	790	IEVEISE
KINA polymerase subulit (RFO30) (Cop-E4L)	E4L E5D	CPXV0/0	NOF1-066	03832	64037	/80	feverse	MVA-HANP-034	43397	44176	780	feverse
Virosome component (Cop-ESR)	ESR	CPXV0/1	NoF1-067	64/5/	65/10	954	forward	MVA-HANP-055	44253	45248	996	torward
Virion protein (Cop-E6R)	E6R	CPXV0/2	NoF1-068	65830	67533	1704	forward	MVA-HANP-056	45385	47/088	1704	forward
Myristylated protein (Cop-E7R)	E7R	CPXV073	NoF1-069	67595	68092	498	forward	MVA-HANP-057	47155	47655	501	forward
ER-localized membrane protein, virion core prot ein (Cop-E8R)	E8R	CPXV074	NoF1-070	68203	69024	822	forward	MVA-HANP-058	47768	48589	822	forward
DNA polymerase (Cop-E9L)	E9L	CPXV075	NoF1-071	69031	72048	3018	reverse	MVA-HANP-059	48596	51616	3021	reverse
Sulfhydryl oxidase (FAD-linked) (Cop-E10R)	E10R	CPXV076	NoF1-072	72080	72367	288	forward	MVA-HANP-060	51648	51935	288	forward
Virion core protein (Cop-E11L)	E11L	CPXV077	NoF1-073	72362	72751	390	reverse	MVA-HANP-061	51930	52319	390	reverse
								MVA-HANP-062 f	52306	52764	459	reverse
Membrane protein (Cop-O1L)	OIL	CPXV078	NoF1-074	72738	74738	2001	reverse	MVA-HAIN -002	52500	52704	457	Teverse
								MVA-HANP-063	53045	54262	1218	reverse
Glutaredoxin 1 (Cop-O2L)	O2L	CPXV079	NoF1-075	74786	75112	327	reverse	MVA-HANP-064	54302	54628	327	reverse
Virus entry fusion complex component (Cop-O3L)	O3L	-	NoF1-076	75136	75243	108	reverse	MVA-HANP-065	54652	54759	108	reverse
DNA-binding core protein (Cop-I1L)	I1L	CPXV080	NoF1-077	75258	76196	939	reverse	MVA-HANP-066	54774	55712	939	reverse
IMV membrane protein (Cop-I2L)	I2L	CPXV081	NoF1-078	76203	76424	222	reverse	MVA-HANP-067	55719	55940	222	reverse
ssDNA-binding phosphoprotein (Cop-I3L)	I3L	CPXV082	NoF1-079	76425	77234	810	reverse	MVA-HANP-068	55941	56750	810	reverse
Ribonucleotide reductase large subunit (Con-I4L)	I4L	CPXV083	NoF1-080	77317	79632	2316	reverse	MVA-HANP-069	56833	59148	2316	reverse
IMV protein VP13 (Cop-I5L)	151	CPXV084	NoF1-081	79659	79898	240	reverse	MVA-HANP-070	59176	59415	240	reverse
Talomera-binding protein (Con-I6I.)	161	CPYV085	NoE1 082	70017	81065	11/0	ravarse	MVA HAND 071	59/3/	60582	1149	rayarsa
Vision core systems protein (Cop ICL)	10L	CPXV086	NoE1 082	91059	82220	1147	reverse	MVA HAND 072	60575	61946	1147	TEVEISE
Niton core cystellie protease (Cop-1/L)	1/L	CPAV000	NUF1-065	81038	04349	12/2	reverse	MUA HAND 070	610573	01840	12/2	reverse
KINA nencase, DEXH-NPH-II domain (Cop-18R)	18R	CPXV087	NoF1-084	82335	84365	2031	torward	MVA-HANP-0/3	61852	63882	2031	torward
Metalloprotease (Cop-G1L)	GIL	CPXV088	NoF1-085	84369	86144	1776	reverse	MVA-HANP-074	63886	65661	1776	reverse
Entry fusion complex component (Cop-G3L)	G3L	CPXV089	NoF1-086	86141	86476	336	reverse	MVA-HANP-075	65658	65993	336	reverse
VLTF (late transcription elongation factor) (Co p-G2R)	G2R	CPXV090	NoF1-087	86470	87132	663	forward	MVA-HANP-076	65987	66649	663	forward
Glutaredoxin-like protein (Cop-G4L)	G4L	CPXV091	NoF1-088	87102	87476	375	reverse	MVA-HANP-077	66619	66993	375	reverse
FEN1-like nuclease (Cop-G5R)	G5R	CPXV092	NoF1-089	87479	88786	1308	forward	MVA-HANP-078	66996	68300	1305	forward

RNA polymerase subunit (RPO7) (Cop-G5.5R)	G5.5R	CPXV093	NoF1-090	88794	88985	192	forward	MVA-HANP-079	68308	68499	192	forward
NLPc/P60 superfamily protein (Con-G6R)	G6R	CPXV094	NoF1-091	88987	89484	498	forward	MVA-HANP-080	68501	68998	498	forward
Virian phosphopratein early morphogenesis (Con-G7L)	G7I	CPXV095	NoF1-092	89449	90564	1116	reverse	MVA-HANP-081	68963	70078	1116	reverse
CC Con-G ORF B	-	CPXV095	11011 0)2	0)44)	overlan	1110	ieverse	-	00705	10070	1110	reverse
VI TE-1 (late transcription factor 1) (Con-CSP)	G8P	CPXV007	NoE1-093	90595	01377	783	forward	MVA_HANP_082	70109	70801	783	forward
Entrylfusion complex component, myristylprotein (Con COP)	COP	CPVV008	NoE1 004	01207	02410	1022	forward	MVA HAND 082	70107	71022	1022	forward
IMV membrone protein (Con L1D)	1 1D	CPXV090	NoF1-094	91397	92419	752	formul	MVA HAND 084	71024	71933	1023	forward
Viral membrane protein (COP-LIK)	LIK	CFX V099	NoF1-095	92420	93172	207	forward	MVA HAND 085	71734	72080	755	forward
Internel vision protein (Con I 2I)	L2K	CPXV100	NoF1-090	93204	93470	1052	IOI Waltu	MVA HAND 086	72071	72981	204	IOIWalu
Internal virion protein (Cop-LSL)	LJL	CPAVIOI	N0F1-09/	93460	94512	1053	reverse	MVA-HANP-080	72971	74023	1055	reverse
ssjasDNA binding protein (VP8) (Cop-L4R)	LAR	CPXV102	N0F1-098	94537	95292	/50	lorward	MVA-HANP-087	74048	74803	/50	lorward
Entry and Fusion IVI v protein (Cop-LSR)	LSR	CPXV103	NoF1-099	95302	95688	387	forward	MVA-HANP-088	/4813	/5199	387	forward
Virion morph (Cop-J1R)	JIR	CPXV104	NoF1-100	95645	96106	462	forward	MVA-HANP-089	/5156	/561/	462	forward
Thymidine kinase (Cop-J2R)	J2R	CPXV105	NoF1-101	96122	96655	534	forward	MVA-HANP-090	75633	76166	534	forward
Poly (A) polymerase small subunit (VP39) (Cop-J3R)	J3R	CPXV106	NoF1-102	96723	97724	1002	forward	MVA-HANP-091	76232	77233	1002	forward
RNA polymerase subunit (RPO22) (Cop-J4R)	J4R	CPXV107	NoF1-103	97639	98196	558	forward	MVA-HANP-092	77148	77705	558	forward
IMV membrane protein (Cop-J5L)	J5L	CPXV108	NoF1-104	98257	98658	402	reverse	MVA-HANP-093	77773	78174	402	reverse
RNA polymerase subunit (RPO147) (Cop-J6R)	J6R	CPXV109	NoF1-105	98765	102625	3861	forward	MVA-HANP-094	78280	82140	3861	forward
Tyr/Ser phosphatase, IFN-gamma inhibitor (Cop-H1L)	H1L	CPXV110	NoF1-106	102622	103137	516	reverse	MVA-HANP-095	82137	82652	516	reverse
IMV membrane protein (Cop-H2R)	H2R	CPXV111	NoF1-107	103151	103720	570	forward	MVA-HANP-096	82666	83235	570	forward
IMV heparin binding surface protein (Cop-H3L)	H3L	CPXV112	NoF1-108	103723	104700	978	reverse	MVA-HANP-097	83238	84212	975	reverse
RAP94 (RNA pol assoc protein) (Cop-H4L)	H4L	CPXV113	NoF1-109	104701	107088	2388	reverse	MVA-HANP-098	84213	86600	2388	reverse
VLTF-4 (late transcription factor 4) (Cop-H5R)	H5R	CPXV114	NoF1-110	107274	107894	621	forward	MVA-HANP-099	86786	87397	612	forward
DNA topoisomerase type I (Cop-H6R)	H6R	CPXV115	NoF1-111	107895	108839	945	forward	MVA-HANP-100	87398	88342	945	forward
CPV-B-116	-	CPXV116			overlap			-				
Viral membrane assembly proteins (VMAP) (Cop-H7R)	H7R	CPXV117	NoF1-112	108877	109317	441	forward	MVA-HANP-101	88379	88819	441	forward
mRNA capping enzyme large subunit (Cop-D1R)	D1R	CPXV118	NoF1-113	109361	111895	2535	forward	MVA-HANP-102	88863	91397	2535	forward
Virion core (Cop-D2L)	D2L	CPXV119	NoF1-114	111854	112294	441	reverse	MVA-HANP-103	91356	91796	441	reverse
Virion core (Cop-D3R)	D3R	CPXV120	NoF1-115	112287	113000	714	forward	MVA-HANP-104	91789	92490	702	forward
Uracil-DNA glycosylase, DNA polymerase processi vity factor (Cop-D4	D4R	CPXV121	NoF1-116	113000	113656	657	forward	MVA-HANP-105	92490	93146	657	forward
NTPase, DNA primase (Cop-D5R)	D5R	CPXV122	NoF1-117	113688	116045	2358	forward	MVA-HANP-106	93178	95535	2358	forward
Morphogenesis, VETF-s (early transcription fact or small) (Cop-D6R)	D6R	CPXV123	NoF1-118	116086	117999	1914	forward	MVA-HANP-107	95576	97489	1914	forward
RNA polymerase subunit (RPO18) (Cop-D7R)	D7R	CPXV124	NoF1-119	118026	118511	486	forward	MVA-HANP-108	97516	98001	486	forward
Carbonic anhydrase, GAG-binding IMV membrane pr otein (Cop-D8L)	D8L	CPXV125	NoF1-120	118474	119388	915	reverse	MVA-HANP-109	97964	98878	915	reverse
mRNA decapping enzyme (Cop-D9R)	D9R	CPXV126	NoF1-121	119430	120071	642	forward	MVA-HANP-110	98920	99561	642	forward
mRNA decapping enzyme (Cop-D10R)	D10R	CPXV127	NoF1-122	120068	120814	747	forward	MVA-HANP-111	99558	100304	747	forward
ATPase, NPH1 (Cop-D11L)	D11L	CPXV128	NoF1-123	120815	122710	1896	reverse	MVA-HANP-112	100305	102200	1896	reverse
mRNA capping enzyme small subunit (Cop-D12L)	D12L	CPXV129	NoF1-124	122744	123607	864	reverse	MVA-HANP-113	102235	103098	864	reverse
VV Tan-unkown-16	-	CPXV130			overlap			-				
Trimeric virion coat protein (rifampicin res) ( Cop-D13L)	D13L	CPXV131	NoF1-125	123638	125293	1656	reverse	MVA-HANP-114	103129	104784	1656	reverse
VLTF-2 (late transcription factor 2) (Cop-A1L)	A1L	CPXV132	NoF1-126	125317	125769	453	reverse	MVA-HANP-115	104808	105260	453	reverse
VLTF-3 (late transcription factor 3) (Cop-A2L)	A2L	CPXV133	NoF1-127	125790	126464	675	reverse	MVA-HANP-116	105281	105955	675	reverse
S-S bond formation pathway protein (Cop-A2.5L)	A2.5L	CPXV134	NoF1-128	126461	126694	234	reverse	MVA-HANP-117	105952	106182	231	reverse
P4b precursor (Cop-A3L)	A3L	CPXV135	NoF1-129	126709	128643	1935	reverse	MVA-HANP-118	106197	108131	1935	reverse
39kDa virion core protein (Cop-A4L)	A4L	CPXV136	NoF1-130	128696	129577	882	reverse	MVA-HANP-119	108184	109002	819	reverse
RNA polymerase subunit (RPO19) (Cop-A5R)	A5R	CPXV137	NoF1-131	129615	130109	495	forward	MVA-HANP-120	109040	109534	495	forward
Viral membrane assembly proteins (VMAP), core p rotein (Cop-A6L)	A6L	CPXV138	NoF1-132	130106	131224	1119	reverse	MVA-HANP-121	109531	110649	1119	reverse
VETF-L (early transcription factor large) (Cop- A7L)	A7L	CPXV139	NoF1-133	131248	133380	2133	reverse	MVA-HANP-122	110673	112805	2133	reverse
VITE-3 34kda subunit (Con-A8R)	A8R	CPXV140	NoF1-134	133434	134300	867	forward	MVA-HANP-123	112859	113725	867	forward
Viral membrane associated, early mornhogenesis protein (Con-A9L)	A9L	CPXV141	NoF1-135	134293	134640	348	reverse	MVA-HANP-124	113718	114002	285	reverse
P4a precursor (Cop-A10L)	A10L	CPXV142	NoF1-136	134641	137322	2682	reverse	MVA-HANP-125	114003	116678	2676	reverse
Viral membrane assembly proteins (VMAP) (Con-A1 1R)	A11R	CPXV143	NoF1-137	137337	138293	957	forward	MVA-HANP-126	116693	117649	957	forward
Virion core and cleavage processing protein (Co.p.A12L)	A12L	CPXV144	NoF1-138	138295	138873	579	reverse	MVA-HANP-127	117651	118214	564	reverse
IMV membrane protein, virion maturation (Con-A1 3L)	A13I	CPXV145	NoF1-139	138897	139109	213	reverse	MVA-HANP-128	118238	118450	213	reverse
Essential IMV membrane protein (Con. A14L)	A14I	CPXV146	NoF1-140	139217	139489	213	reverse	MVA_HANP_120	118558	118830	213	reverse
Non-essential IMV membrane protein (Con-A14 51)	A14 5I	CPXV147	NoF1-141	139506	130667	162	reverse	MVA_HAND_130	1188/17	110000	162	reverse
Core protein (Con-A15L)	A15I	CPXV149	NoF1-141	139657	1300/1	285	reverse	MVA_HAND_131	1180097	110787	285	Teverse
core proven (copraisi)	ALC I	CI A V 140	1101 1-142	157057	137741	205	10 10150	MINT-11/101-131	110770	117202	205	10,00150

Myristylated protein, essential for entry fusio n (Cop-A16L)	A16L	CPXV149	NoF1-143	139925	141058	1134	reverse	MVA-HANP-132	119266	120399	1134	reverse
IMV membrane protein (Cop-A17L)	A17L	CPXV150	NoF1-144	141061	141669	609	reverse	MVA-HANP-133	120402	121013	612	reverse
DNA helicase, transcript release factor (Cop-A18R)	A18R	CPXV151	NoF1-145	141684	143165	1482	forward	MVA-HANP-134	121028	122509	1482	forward
Zinc finger-like protein (Cop-A19L)	A19L	CPXV152	NoF1-146	143146	143379	234	reverse	MVA-HANP-135	122490	122723	234	reverse
IMV membrane protein, entry fusion complex comp onent (Cop-A21L)	A21L	CPXV153	NoF1-147	143380	143733	354	reverse	MVA-HANP-136	122724	123077	354	reverse
DNA polymerase processivity factor (Cop-A20R)	A20R	CPXV154	NoF1-148	143732	145012	1281	forward	MVA-HANP-137	123076	124356	1281	forward
Holliday junction resolvase (Cop-A22R)	A22R	CPXV155	NoF1-149	144942	145505	564	forward	MVA-HANP-138	124286	124849	564	forward
VITF-3 45kda subunit (Cop-A23R)	A23R	CPXV156	NoF1-150	145525	146673	1149	forward	MVA-HANP-139	124869	126017	1149	forward
RNA polymerase subunit (RPO132) (Cop-A24R)	A24R	rpo132/CPXV157	NoF1-151	146670	150164	3495	forward	MVA-HANP-140	126039	129509	3471	forward
A-type inclusion protein (Cop-A25L)	A25L	CPXV158	NoF1-152	150142	153918	3777	reverse	MVA-HANP-141 f	129514	129711	198	reverse
Unknown (CPV-B-160)	-	CPXV160			overlap			-				
P4c procursor (Cop.A26I.)	4261	CPYV161	NoE1 152	152064	155522	1560		MVA HAND 142 f	120207	120080	602	
IMV surface protein fusion protein (Con A 271)	A 271	CPVV162	NoF1 154	155594	155016	222	reverse	MVA-HAND 142	130297	121271	222	reverse
INV Surface protein, fusion protein (Cop-A27E)	A27L	CPXV162	NoF1 155	155017	156257	333	reverse	MVA HAND 144	131039	121912	441	reverse
DNA nehrmanna anhunit (DD035) (Can A201)	A20L	CDVV164	NoF1-155	155717	150337	018	TEVEISE	MVA-HAND 145	121912	122720	441	leveise
NNA polymerase subunit (RFO55) (Cop-A29L)	A29L	CPAV104	NoF1-150	150556	157469	918	leverse	MVA-HANF-145	131613	132730	918	reverse
Nimber (Cop-A50L)	ASUL	CPAV105	NoF1-157	1572501	157408	231	reverse	MVA-HANF-140	132093	132920	234	reverse
Viral memorane assembly proteins (VMAP) (Cop-A30.5L)	A30.5L	105.5 CDVV166	NoF1-158	157501	157629	129	forward	MVA-HANP-147	132959	133087	129	ferrored
ATDress IDNA see the size sector (Corr. A221.)	ASIK	CPAV100	NoF1-139	157028	158041	414	lorward	MVA-HANF-148	133080	133403	378	Iorward
A IPase DNA packaging protein (Cop-A32L)	A32L	CPXV16/	NoF1-160	158011	158820	810	reverse	MVA-HANP-149	133433	134242	810	feverse
EEV membrane phosphoglycoprotein, C-type lectin -like domain (Cop-A.	A33R	CPXV168	NoF1-161	158938	159513	5/6	forward	MVA-HANP-150	134360	134917	558	forward
C-type lectin-like IEV EEV glycoprotein (Cop-A34K)	A34R	CPXV169	N0F1-162	159537	160043	507	forward	MVA-HANP-151	134941	135447	507	forward
VV-Cop-A ORF M	-	CPXV170	N. EL 162	1 (0000	overlap	501	C 1	-	125401	12(02)	521	6 1
MHC class II antigen presentation inhibitor (Co p-A35R)	A35R	CPXV1/1	NoF1-163	160089	160619	531	forward	MVA-HANP-152	135491	136021	531	forward
IEV transmembrane phosphoprotein (Cop-A36R)	A36R	CPXV1/2	NoF1-164	160683	161351	669	forward	MVA-HANP-153	136088	136/14	627	forward
Hypothetical protein (Cop-A37R)	A3/R	CPXV173	NoF1-165	161418	162209	792	forward	MVA-HANP-154	136778	137569	792	forward
Unknown (Gar-A43R)	-	CPXV174	NoF1-166	162317	162502	186	forward	-				
CD47-like, integral membrane protein (Cop-A38L)	A38L	CPXV175	NoF1-167	162499	163332	834	reverse	MVA-HANP-155	137829	138662	834	reverse
Semanhorin (Con-A39R)	A39R	CPXV176	NoF1-168	163348	164559	1212	forward	MVA-HANP-156 <sup>t</sup>	138679	138930	252	forward
Schuphorn (Coprissic)	no/k	CIAVITO	10011 100	105540	104557	1212	ioi ward	MVA-HANP-157 <sup>f</sup>	139236	139868	633	forward
Lectin homolog (Cop-A40R)	A40R	CPXV177	NoF1-169	164581	165063	483	forward	MVA-HANP-158	139894	140400	507	forward
Chemokine binding protein (Cop-A41L)	A41L	CPXV178	NoF1-170	165161	165823	663	reverse	MVA-HANP-159	140439	141098	660	reverse
Profilin-like protein, ATI-localized (Cop-A42R)	A42R	CPXV179	NoF1-171	166002	166403	402	forward	MVA-HANP-160	141270	141656	387	forward
Type I membrane glycoprotein (Cop-A43R)	A43R	CPXV180	NoF1-172	166441	167022	582	forward	MVA-HANP-161	141694	142266	573	forward
Hypothetical protein (Cop-A43.5R)	A43.5R	CPXV181	NoF1-173	167025	167270	246	forward	MVA-HANP-162	142274	142510	237	forward
3 beta-hydroxysteroid dehydrogenase delta 5->4 isomerase (Cop-A44L)	A44L	CPXV182	NoF1-174	167362	168402	1041	reverse	MVA-HANP-163	142610	143650	1041	reverse
Inactive Cu-Zn superoxide dismutase-like virion protein (Cop-A45R)	A45R	CPXV183	NoF1-175	168449	168826	378	forward	MVA-HANP-164	143697	144062	366	forward
IL-1 TLR signaling inhibitor (Cop-A46R)	A46R	CPXV184	NoF1-176	168816	169538	723	forward	MVA-HANP-165	144052	144774	723	forward
Immunoprevalent protein (Cop-A47L)	A47L	CPXV185	NoF1-177	169674	170408	735	reverse	MVA-HANP-166	144822	145538	717	reverse
Thymidylate kinase (Cop-A48R)	A48R	CPXV186	NoF1-178	170281	171123	843	forward	MVA-HANP-167	145637	146251	615	forward
Putative phosphotransferase anion transport pro tein (Cop-A49R)	A49R	CPXV187	NoF1-179	171172	171660	489	forward	MVA-HANP-168	146275	146763	489	forward
ATP-dependent DNA ligase (Cop-A50R)	A50R	CPXV188	NoF1-180	171693	173357	1665	forward	MVA-HANP-169	146795	148453	1659	forward
Hypothetical protein (Cop-A51R)	A51R	CPXV189	NoF1-181	173410	174414	1005	forward	MVA-HANP-170	148499	149644	1146	forward
Toll/IL-1 receptor-like protein, IL-1, NFkB sig nalling inhibitor (Cop-A5	A52R	CPXV190	NoF1-182	174483	175055	573	forward	-				
TNF receptor (CrmC) (Cop-A53R)	A53R	CrmC/CPXV191	-					-				
CPV-B-192	-	CPXV192	NoF1-183	175819	175989	171	forward	-				
BTB Kelch-domain containing protein: CRL comple x (Cop-A55R)	A55R	CPXV193	NoF1-184	176193	177884	1692	forward	-				
Hemagglutinin (Cop-A56R)	A56R	CPXV194	NoF1-185	177936	178850	915	forward	MVA-HANP-171	152967	153914	948	forward
Guanylate kinase (Cop-A56.5R)	A57R	CPXV195	NoE1-186	178867	179460	594	forward	MVA-HANP-172 f	154210	154503	294	forward
Ser Thr Kingse (Con-B1R)	BIR	CPXV196	NoF1-187	179610	180509	900	forward	MVA-HANP-173	154654	155556	903	forward
(op bit)	DIK	CIAVIDO	1101 1-107	17,010	100507	200	ioi walu	MUA HAND 171	155(05	155005	201	for ward
Sahlafan (Can D2D)	B2R	CDVU107	NoE1 199	190570	182006	1510	formuna 1	MVA-HANP-1/4	155695	155985	291	torward
эсшанн (Сор-62K)		CPAV19/	19011-188	180579	182090	1518	forward	MVA-HANP-175	155840	156271	432	forward
	B3R						L	MVA-HANP-176	156468	157007	540	forward
Ankyrin (Con-B4B)	B4P	CPYV108						MVA-HANP-177 <sup>f</sup>	157234	157767	534	forward
Ашкупп (Сор-D4К)	DHK	CIAV170	NoF1-189	182360	184045	1686	forward	MVA-HANP-178 f	157658	158887	1230	forward
EEV type-1 membrane glycoprotein, protective an tigen (Cop-B5R)	B5R	CPXV199	NoF1-190	184149	185102	954	forward	MVA-HANP-179	158975	159928	954	forward
Ankyrin-like protein (Cop-B6R)	B6R	CPXV200	NoF1-191	185201	185500	300	forward	MVA-HANP-180	160025	160546	522	forward
· · · · · · · · · · · · · · · · · · ·												

Virulence, ER resident (Cop-B7R)	B7R	CPXV201	NoF1-192	185774	186319	546	forward	MVA-HANP-181	160584	161117	534	forward
Soluble IFN-g receptor-like protein (Cop-B8R)	B8R	CPXV202	NoF1-193	186371	187171	801	forward	MVA-HANP-182 <sup>f</sup>	161172	161852	681	forward
ER-localized apoptosis regulator (Cop-B9R)	B9R	CPXV203	NoF1-194	187192	187929	738	forward	MVA-HANP-183	162009	162227	219	forward
Kelch-like protein (Cop-B10R)	B10R	CPXV204	NoF1-195	188076	189581	1506	forward	MVA-HANP-184	162190	162666	477	forward
Hypothetical protein (Cop-B11R)	B11R	CPXV205	NoF1-196	189663	189887	225	forward	MVA-HANP-185	162738	162962	225	forward
Ser Thr Kinase (Cop-B12R)	B12R	CPXV206	NoF1-197	189954	190817	864	forward	MVA-HANP-186	163029	163880	852	forward
Semin 1 2 3 (Con-K2L)	B13R	CrmA/CPXV207	NoF1-198	190914	191948	1035	forward	MVA-HANP-187 <sup>f</sup>	163988	164338	351	forward
(cop 1121)	B14R	0112001710207	11011 190	190914	171740	1055	lorward	MVA-HANP-188 <sup>f</sup>	164313	164981	669	forward
Hypothetical protein (Cop-C16L)	B15R	CPXV208	NoF1-199	192079	192528	450	forward	MVA-HANP-189	165057	165488	432	forward
IL-1 beta receptor (Cop-B16R)	B16R	CPXV209	NoF1-200	192612	193589	978	forward	MVA-HANP-190	165572	166552	981	forward
IL-1 beta inhibitor (Cop-B17L)	B17L	CPXV210	NoF1-201	193637	194659	1023	reverse	MVA-HANP-191	166598	167620	1023	reverse
Ankyrin (Cop-B18R)	B18R	CPXV211	NoF1-202	194801	196525	1725	forward	MVA-HANP-192	167760	169484	1725	forward
IFN-alpha beta receptor glycoprotein (Cop-B19R)	B19R	CPXV212	NoF1-203	196544	197641	1098	forward	MVA-HANP-193 f	169550	170254	705	forward
Ankyrin (Cop-B20R)	B20R	CPXV213	NoF1-204	197702	200059	2358	forward	-				
CPV-B-214	-	CPXV214			overlap			-				
kelch-like protein (EVM-167)	-	CPXV215	NoF1-205	200162	201835	1674	forward	-				
Hypothetical protein (Cop-C11.5R)	C11.5R	CPXV216	-					-				
Serpin 1,2,3 (Cop-K2L)	C12L	CPXV217	NoF1-206	202015	203124	1110	forward	-				
Hypothetical protein (Cop-C14L)	C14L	CPXV218	NoF1-207	203301	203882	582	forward	-				
Surface glycoprotein	-	CPXV219	NoF1-208	204128	209893	5766	forward	MVA-HANP-194 <sup>f</sup>	170753	170965	213	forward
Ankyrin (Cop-C19L)	C19L	CPXV220	NoF1-209	210110	211915	1806	forward	-				
TNF receptor (CrmD)	-	CPXV221	NoF1-210	211922	212890	969	forward	-				
Hypothetical protein (Cop-C16L)	B22R	CPXV222	NoF1-211	213564	214025	462	forward	MVA-HANP-195	171448	172014	567	forward
Ankyrin (Con-C17I)	B23R/C17I	CPXV223	NoF1-212	21/2/0	216246	2007	forward	MVA-HANP-196 f	172082	172783	702	forward
	B25NC17E	CI XV225	101 1-212	214240	210240	2007	loi walu	MVA-HANP-197 <sup>f</sup>	172860	173168	309	forward
Ankyrin-like repeat containing protein	-	CPXV224	NoF1-213	216286	216375	90	forward	-				
Ankyrin (Cop-C19L)	B25R/C19L	CPXV225	NoF1-214	216457	218223	1767	forward	MVA-HANP-198 <sup>f</sup>	173856	174386	531	forward
TNF receptor (CrmB) (Cop-C22L)	B28R/C22L	crmB/CPXV226	NoF1-215	218301	219374	1074	forward	-				
Chemokine binding protein (Cop-C23L)	B29R/C23L	vCCI/CPXV227	NoF1-216	219448	220185	738	forward	MVA-HANP-199 <sup>f</sup>	174818	175228	411	forward
CPV-B-002	-	CPXV228	NoF1-217	220214	220441	228	forward	-				

f= CDs was fragmented, disrupted or partially deleted

	CPXV-No-F1	MVA-HANP				R1							R2							R3			
Function	CDS	CDS	CPXV- NoF1	MVA- HANP	CDS	Start	Stop	Length	Direction	CPXV- NoF1	MVA- HANP	CDS	Start	Stop	Length	Direction	CPXV- NoF1	MVA- HANP	CDS	Start	Stop	Length	Direction
CPV-B-002	NoF1-001	-	х		NoF1-001	1186	1413	228	reverse	x		NoF1-001	1216	1443	228	reverse	x		NoF1-001	894	1121	228	reverse
Chemokine binding protein (Cop-C23L)	NoF1-002	MVA-HANP-001 f	х		NoF1-002	1442	2179	738	reverse	x		NoF1-002	1472	2209	738	reverse	x		NoF1-002	1150	1887	738	reverse
CPV-B-004	overlap	-																					
TNF receptor (CrmB) (Cop-C22L)	NoF1-003	-	х		NoF1-003	2253	3326	1074	reverse	х		NoF1-003	2283	3356	1074	reverse	х		NoF1-003	1961	3034	1074	reverse
Ankyrin (Cop-C19L)	NoF1-004	MVA-HANP-002 f	х		NoF1-004	3404	5170	1767	reverse	х		NoF1-004	3434	5200	1767	reverse	x		NoF1-004	3112	4878	1767	reverse
Ankyrin-like repeat containing protein	NoF1-005	-	х		NoF1-005	5252	5341	90	reverse	х		NoF1-005	5282	5371	90	reverse	х		NoF1-005	4960	5049	90	reverse
		MVA-HANP-003 f	х		NoF1-006	5381	7387	2007	reverse	х		NoF1-006	5411	7417	2007	reverse	x		NoF1-006	5089	7095	2007	reverse
Ankyrin (Cop-C17L)	NoF1-006	MVA-HANP-004 f																					
		MVA-HANP-005 f																					
Hypothetical protein (Cop-C16L)	NoF1-007		х		NoF1-007	7600	8061	462	reverse	x		NoF1-007	7632	8093	462	reverse	x		NoF1-007	7310	7771	462	reverse
Alpha amanatin target protein (Cop-N2L)	NoF1-008	-	х		NoF1-008	8232	8885	654	reverse	х		NoF1-008	8264	8917	654	reverse	х		NoF1-008	7942	8595	654	reverse
BTB Kelch-domain containing protein; CRL complex (Cop-A55R)	NOF1-009	-	х		NOF1-009	9198	9791	594	reverse	х		NOF1-009	9230	9823	594	reverse	х		NOF1-009	8908	9501	594	reverse
Ankyrin (Cop-B20R)	NoF1-010	-	х		NoF1-010	10118	12133	2016	reverse	х		NoF1-010	10150	12165	2016	reverse	x		NoF1-010	9828	11843	2016	reverse
C-type lectin domain containing protein	NoF1-011	-	х		NoF1-011	12360	12569	210	reverse	х		NoF1-011	12392	12601	210	reverse	х		NoF1-011	12070	12279	210	reverse
BTB Kelch-domain containing protein; CRL complex (Cop-A55R)	NoF1-012	-	х		NoF1-012	12997	13608	612	reverse	х		NoF1-012	13029	13640	612	reverse	х		NoF1-012	12707	13318	612	reverse
TNF receptor (CrmB) (Cop-C22L)	NoF1-013	-	x		NoF1-013	13683	14291	609	reverse	х		NoF1-013	13715	14323	609	reverse	x		NoF1-013	13393	14001	609	reverse
INF-alpha receptor like protein	NoF1-014 NoF1-015	-	X		NoF1-014	14288	14620	333	reverse	X		NoF1-014	14320	14652	333	reverse	X		NoF1-014	13998	14330	333	reverse
Ankyrin (CDYV-017)	NoF1-015	-	x		NoF1-015	14095	10595	1209	reverse	X		NoF1-015	17206	19612	1209	reverse	x		NoF1-015	16094	19705	1209	reverse
MPV-7-N3R	NoF1-010	-	x		NoF1-010	1/2/4	10301	516	reverse	x		NoF1-010 NoF1-017	1/300	19227	516	reverse	x		NoF1-018	18390	18905	516	reverse
Ankvrin (Cop-B18R)	NoF1-018	-	X		NoF1-017	19258	21873	2616	reverse	X		NoF1-017	19290	21905	2616	reverse	x		NoF1-017	18968	21583	2616	reverse
Host range protein	NoF1-019	-	х		NoF1-019	21921	22439	519	reverse	х		NoF1-019	21953	22471	519	reverse	x		NoF1-019	21631	22149	519	reverse
Secreted EGF-like protein (Cop-C11R)	NoF1-020	MVA-HANP-006	х		NoF1-020	22606	23031	426	forward	х		NoF1-020	22638	23063	426	forward	х		NoF1-020	22316	22741	426	forward
IL-1 receptor antagonist (Cop-C10L)	NoF1-021	MVA-HANP-007	х		NoF1-021	23184	24179	996	reverse	х		NoF1-021	23216	24211	996	reverse	x		NoF1-021	22894	23889	996	reverse
Zinc finger-like protein	NoF1-022	MVA-HANP-008 f	х		NoF1-022	24694	25422	729	forward	х		NoF1-022	24726	25454	729	forward	x		NoF1-022	24404	25132	729	forward
Soluble IL-18 binding protein (Bsh-D7L)	NoF1-023	MVA-HANP-009	х		NoF1-023	25571	25951	381	reverse	х		NoF1-023	25603	25983	381	reverse	x		NoF1-023	25281	25661	381	reverse
		MVA-HANP-010 <sup>f</sup>	х		NoF1-024	26010	28025	2016	reverse	х		NoF1-024	26042	28057	2016	reverse	x		NoF1-024	25720	27735	2016	reverse
		MVA-HANP-011 f																					
Ankyrin Host Range (Bang-D8L)	NoF1-024	MVA-HANP-012 f																					
		MVA-HANP-013 f																					
		MVA-HANP-014 f															1						
ANK-containing protein	NoF1-025	MVA-HANP-015	х		NoF1-025	28139	28330	192	reverse	х		NoF1-025	28171	28362	192	reverse	х		NoF1-025	27849	28040	192	reverse
		MVA-HANP-016 f	х		NoF1-026	28504	30408	1905	reverse	х		NoF1-026	28536	30440	1905	reverse	x		NoF1-026	28214	30118	1905	reverse
Ankyrin; Type I IFN resistance (Cop-C9L)	NoF1-026	MVA-HANP-017 f																					
		MVA-HANP-018 f																					
Unknown (Con-C8L)	NoF1-027	MVA-HANP-019	x		NoF1-027	30450	31007	558	reverse	x		NoF1-027	30482	31039	558	reverse	×		NoF1-027	30160	30717	558	reverse
Type 1 IFN inhibitor (Cop-C7L)	NoF1-028	MVA-HANP-020	x		NoF1-028	31079	31531	453	reverse	x		NoF1-028	31111	31563	453	reverse	x		NoF1-028	30789	31241	453	reverse
Bcl-2-like protein, IFN-beta inhibitor (Cop-C6L)	NoF1-029	MVA-HANP-021	х		NoF1-029	31762	32229	468	reverse	х		NoF1-029	31794	32261	468	reverse	x		NoF1-029	31472	31939	468	reverse
Kelch-like protein (Cop-C5L)	overlap	-																					
Kelch-like protein (Cop-C5L)	NoF1-030	-	х		NoF1-030	32562	32939	378	reverse	х		NoF1-030	32594	32971	378	reverse	x		NoF1-030	32272	32649	378	reverse
IL-1 receptor antagonist (Cop-C10L)	NoF1-031	-	х		NoF1-031	33000	33947	948	reverse	х		NoF1-031	33032	33979	948	reverse	х		NoF1-031	32710	33657	948	reverse
Complement binding (secreted) (Cop-C3L)	NoF1-032	-	х		NoF1-032	34014	34808	795	reverse	х		NoF1-032	34046	34840	795	reverse	x		NoF1-032	33724	34518	795	reverse
POZ/BTB Kelch doman protein (Cop-C2L)	NoF1-033	-	X		NoF1-033	34871	36409	1539	reverse	X		NoF1-033	34903	36441	1539	reverse	x		NoF1-033	34581	36119	1539	reverse
Anti anontotio Pol 2 liko arotoin (Cop N11)	NOF1-034	-	х		NOF1-034	50476	5/110	059	leverse	λ		N0F1-034	50510	5/140	059	leverse	X		NUF1-034	30100	50620	059	Teverse
Alaba amagatin target protein (Cop N2L)	NoF1-055	MVA-HANP-022 MVA HAND 022	X		NoF1-035	37158	3/511	554	reverse	x		N0F1-035	37190	3/543	554	reverse	x		N0F1-035	30808	37221	554	reverse
Alpha amanaun target protein (Cop-N2L)	NOF1-050	MVA-HANP-025	x		N0F1-036	3/633	38163	531	reverse	x		N0F1-036	3/665	38195	531	reverse	x		N0F1-036	3/343	3/8/3	531	reverse
ANK-containing protein; apoptosis inihibitor (Cop-M1L)	NoF1-037		x		NoF1-037	38206	39621	1416	reverse	x		NoF1-037	38738	39653	1416	reverse	×		NoF1-037	37916	39331	1416	reverse
NFkB inhibitor (Cop-M2L)	NoF1-038	-	x		NoF1-038	39599	40261	663	reverse	x		NoF1-038	39631	40293	663	reverse	x		NoF1-038	39309	39971	663	reverse
Ankvrin/NFkB inhibitor (Cop-K1L)	NoF1-039	MVA-HANP-024 f	x		NoF1-039	40385	41242	858	reverse	x		NoF1-039	40417	41274	858	reverse	×		NoF1-039	40095	40952	858	reverse
Serpin 1.2.3 (Cop-K2L)	NoF1-040	MVA-HANP-025	x		NoF1-040	41600	42721	1122	reverse	x		NoF1-040	41632	42753	1122	reverse	x		NoF1-040	41310	42431	1122	reverse
IFN resistance, PKR eIF-alpha inhibitor (Cop-K3 L)	NoF1-041	MVA-HANP-026	х		NoF1-041	42772	43038	267	reverse	х		NoF1-041	42804	43070	267	reverse	x		NoF1-041	42482	42748	267	reverse
Phospholipase-D-like protein (Cop-K4L)	NoF1-042	MVA-HANP-027	х		NoF1-042	43098	44372	1275	reverse	х		NoF1-042	43130	44404	1275	reverse	x		NoF1-042	42808	44082	1275	reverse
	N E1 042	MVA-HANP-028 f	х		NoF1-043	44400	45230	831	reverse		х	MVA-HANP-02	44432	44944	513	reverse	x		NoF1-043	44110	44940	831	reverse
Monoglycende iipase (Cop-K5L/K6L)	N0F1-043	MVA-HANP-029 f									x	MVA-HANP-02	44966	45160	195	reverse							
Host immune response repressor (Cop-K7R)	NoF1-044	MVA-HANP-030	х		NoF1-044	45368	45817	450	forward		х	MVA-HANP-03	45330	45779	450	forward	x	İ	NoF1-044	45078	45527	450	forward
CPV-B-047	overlap	-																					
Caspase-9 (apoptosis) inhibitor (mitochondrial- associated) (Cop-F1L)	NoF1-045	MVA-HANP-031	х		NoF1-045	45891	46634	744	reverse		х	VIVA-HANP-03	45844	46512	669	reverse	x		NoF1-045	45601	46344	744	reverse
dUTPase (Cop-F2L)	NoF1-046	MVA-HANP-032	х		NoF1-046	46634	47077	444	reverse		х	MVA-HANP-03	46524	46967	444	reverse	x		NoF1-046	46344	46787	444	reverse
Kelch-like protein (Cop-F3L)	NoF1-047	MVA-HANP-033	х		NoF1-047	47101	48543	1443	reverse		х	MVA-HANP-03	46991	48421	1431	reverse	x		NoF1-047	46811	48253	1443	reverse
Ribonucleotide reductase small subunit (Cop-F4L)	NoF1-048	MVA-HANP-034	х		NoF1-048	48554	49555	1002	reverse		х	MVA-HANP-03	48432	49391	960	reverse	x		NoF1-048	48264	49265	1002	reverse
36kDa major membrane protein (Cop-F5L)	NoF1-049	MVA-HANP-035 f	х		NoF1-049	49545	50510	966	reverse		х	MVA-HANP-03	49423	49716	294	reverse	x	-	NoF1-049	49255	50220	966	reverse
		MVA-HANP-036 f									х	MVA-HANP-03	49685	50341	657	reverse							

## Supplementary Table 2. Predicted coding sequences (CDS) in the progeny viruses compared to parental viruses (CPXV-No-F1 and MVA-HANP).

					_															
Hypothetical protein (Cop-F6L)	NoF1-050	MVA-HANP-037	х	NoF1-05	50540	50755	216	reverse		х	VIVA-HANP-03 50371	50595	225	reverse	x	NoF1-050	50250	50465	216	reverse
Hypothetical protein (Cop-F7L)	NoF1-051	MVA-HANP-038	х	NoF1-05	50771	51016	246	reverse		х	MVA-HANP-038 50611	50853	243	reverse	х	NoF1-051	50481	50726	246	reverse
Cytoplasmic protein (Cop-F8L)	NoF1-052	MVA-HANP-039	х	NoF1-05	51343	51540	198	reverse		х	MVA-HANP-03 51000	51197	198	reverse	x	NoF1-052	50879	51076	198	reverse
C. Charles and the second in the second (Carl DOI)																				
S-S bond formation pathway protein substrate (Cop-F9L)	NoF1-053	MVA-HANP-040	х	NoF1-05	51601	52239	639	reverse		x	MVA-HANP-040 51257	51895	639	reverse	x	NoF1-053	51137	51775	639	reverse
Essential Ser[Thr kinase morph (Cop-F10L)	NoF1-054	MVA-HANP-041	х	NoF1-05	52226	53545	1320	reverse		х	MVA-HANP-04: 51882	53201	1320	reverse	x	NoF1-054	51762	53081	1320	reverse
VV_Cop-F ORF D	overlap	-																		
	-	MVA-HANP-042	x	NoE1-05	53568	54632	1065	reverse		х	MVA-HANP-042 53224	53478	255	reverse	Y	NoE1-055	53104	54168	1065	reverse
RhoA signalling inhibitor, virus release protei n (Cop-F11L)	N.E1.055	MUA HAND 042	A	1012 03	55500	5-1052	1005	Tereise			10/1 10/01 01 5322-1	54007	200	Teverse	^	1011000	33104	54100	1005	Tevense
	N0F1-055	MVA-HANP-045								X	MVA-HANP-04: 53935	54237	303	reverse						
EEV maturation protein (Cop-F12L)	NoF1-056	MVA-HANP-044	х	N0F1-05	546/5	565/9	1905	reverse		X	MVA-HANP-044 54280	5618/	1908	reverse	x	N0F1-056	54211	56115	1905	reverse
Palmitylated EEV membrane glycoprotein (Cop-F13 L)	NoF1-05/	MVA-HANP-045	X	NoF1-05	56613	57731	1119	reverse		X	MVA-HANP-04 56214	57332	1119	reverse	x	NoF1-057	56149	57267	1119	reverse
Unknown (Cop-F14L)	NoF1-058	MVA-HANP-046	х	NoF1-05	57749	57970	222	reverse		х	MVA-HANP-046 57350	57571	222	reverse	x	NoF1-058	57285	57506	222	reverse
IMV protein (Cop-F14.5L)	-	MVA-HANP-047								х	VIVA-HANP-04 57621	57770	150	reverse						
CPV-B-063	NoF1-059	-	х	NoF1-05	58017	58175	159	forward			-				х	NoF1-059	57553	57711	159	forward
Unknown conserved protein (Cop-F15L)	NoF1-060	MVA-HANP-048	х	NoF1-06	58243	58719	477	reverse		х	VIVA-HANP-048 57843	58319	477	reverse	х	NoF1-060	57779	58255	477	reverse
Non-functional Serine Recombinase (Cop-F16L)	NoF1-061	MVA-HANP-049	х	NoF1-06	58719	59420	702	reverse		х	VIVA-HANP-049 58326	59021	696	reverse	х	NoF1-061	58255	58956	702	reverse
DNA-binding phosphoprotein (VP11); mTOR antagonist (Cop-F17R)	NoF1-062	MVA-HANP-050	х	NoF1-06	59483	59788	306	forward		х	VIVA-HANP-050 59085	59390	306	forward	х	NoF1-062	59019	59324	306	forward
Poly (A) polymerase catalytic subunit (VP55) (Cop-E1L)	NoF1-063	MVA-HANP-051	х	NoF1-06	59785	61224	1440	reverse		х	MVA-HANP-05: 59387	60826	1440	reverse	х	NoF1-063	59321	60760	1440	reverse
IEV morphogenesis (Cop-E2L)	NoF1-064	MVA-HANP-052	х	NoF1-06	61221	63434	2214	reverse		х	VIVA-HANP-052 60823	63036	2214	reverse	x	NoF1-064	60757	62970	2214	reverse
dsRNA-binding protein, IFN resistance PKR inhibitor (Z-DNA binding) (Cop-																				
E3L)	NoF1-065	MVA-HANP-053	х	NoF1-06	63565	64137	573	reverse		х	MVA-HANP-053 63163	63735	573	reverse	x	NoF1-065	63101	63673	573	reverse
RNA polymerase subunit (RPO30) (Con-E4L)	NoF1-066	MVA-HANP-054	x	NoE1-06	64192	64977	786	reverse		x	MVA-HANP-054 63790	64569	780	reverse	×	NoE1-066	63728	64513	786	reverse
Virosome component (Con-E5R)	NoF1-067	MVA-HANP-055	x	NoE1-06	65097	66050	954	forward		x	MVA-HANP-05 64646	65641	996	forward	x	NoE1-067	64633	65586	954	forward
Virion protein (Con-F6R)	NoF1-068	MVA-HANP-056	v	NoE1-06	66170	67873	1704	forward	v	A	NoE1-068 65778	67/81	1704	forward	, , , , , , , , , , , , , , , , , , ,	NoE1-068	65706	67409	1704	forward
Muristylated protein (Cop.E7P)	NoF1-069	MVA-HANP-057	v	NoE1-08	67935	68432	101	forward	v		NoE1-060 67543	68040	/08	forward	, v	NoE1-069	67471	67968	/08	forward
EP localized membrane protein virian core protein (Con ESP)	NoF1 070	MVA HAND 059	л х	NoF1 00	605.42	60264	450	forward	~ ~		NoE1 070 69151	69072	930	forward	~	NoF1 070	69070	69000	930	forward
DNA polymerose (Cop EQL)	NoF1 071	MVA HAND 050	л х	NoF1-07	60271	71200	2019	rowaru	л х		NoF1-070 08131	71006	2019	rowaru	~	NoF1-070	69007	71024	2019	rovorco
Sufference (Cop-E5E)	NoF1 072	MVA HAND 060	л 	NoF1-07	72420	72300	2010	fearend	л 		N=51.072 73039	71350	3010	ferward		NoF1-071	71050	71524	3010	feeward
Sumyuryi oxuase (FAD-mikeu) (Cop-ETOK)	NOF1-072	MVA-HANF-000	λ	NOF1-07.	72420	72/0/	200	TOrward	Å		NUF1-072 72028	72315	288	TORWARD	x	NOF1-072	71950	72243	266	Torward
vinon core protein (Cop-ETIL)	N0F1-0/5	MVA-HANP-001	X	NOF1-07	72702	73091	390	reverse		X	WVA-HANP-06. 72310	72699	390	reverse	x	N0F1-073	/2258	/262/	390	reverse
Membrane protein (Con-OIL)	NoF1-074	MVA-HANP-062	х	NoF1-07-	73078	75078	2001	reverse	х		NoF1-074 72686	74686	2001	reverse	х	NoF1-074	72614	74614	2001	reverse
Menipiane protein (cop 012)	1101 1 071	MVA-HANP-063 f																		
Glutaredoxin 1 (Cop-O2L)	NoF1-075	MVA-HANP-064	х	NoF1-07	75126	75452	327	reverse		х	MVA-HANP-064 74726	75052	327	reverse	х	NoF1-075	74662	74988	327	reverse
Virus entry/fusion complex component (Cop-O3L)	NoF1-076	MVA-HANP-065	х	NoF1-07	75476	75583	108	reverse		х	MVA-HANP-06 75076	75183	108	reverse	x	NoF1-076	75012	75119	108	reverse
DNA-binding core protein (Cop-IIL)	NoF1-077	MVA-HANP-066	х	NoF1-07	75598	76536	939	reverse		х	VIVA-HANP-066 75198	76136	939	reverse	x	NoF1-077	75134	76072	939	reverse
IMV membrane protein (Cop-I2L)	NoF1-078	MVA-HANP-067	х	NoF1-07	76543	76764	222	reverse		х	MVA-HANP-06 76143	76364	222	reverse	x	NoF1-078	76079	76300	222	reverse
ssDNA-binding phosphoprotein (Cop-I3L)	NoF1-079	MVA-HANP-068	х	NoF1-07	76765	77574	810	reverse		x	MVA-HANP-068 76365	77174	810	reverse	x	NoF1-079	76301	77110	810	reverse
Ribonucleotide reductase large subunit (Con-I4L.)	NoF1-080	MVA-HANP-069	x	NoE1-08	77657	79972	2316	reverse		x	MVA-HANP-069 77257	79572	2316	reverse	x	NoE1-080	77193	79508	2316	reverse
IMV protein VP13 (Con-ISL)	NoF1-081	MVA-HANP-070	x	NoE1-08	79999	80238	240	reverse		x	MVA-HANP-070 79600	79839	240	reverse	x	NoE1-081	79535	79774	240	reverse
Telomere-binding protein (Con-I6L)	NoF1-082	MVA-HANP-071	x	NoF1-08	80257	81405	1149	reverse		x	VVA-HANP-07 79858	81006	1149	reverse	x	NoF1-082	79793	80941	1149	reverse
Virion core cysteine protease (Con-17L)	NoF1-083	MVA-HANP-072	x	NoF1-08	81398	82669	1272	reverse		x	MVA-HANP-07 80999	82270	1272	reverse	Y Y	NoF1-083	80934	82205	1272	reverse
RNA beliesse DEvH-NPH-II domain (Con-ISR)	NoF1-084	MVA-HANP-072	v	NoF1-08	82675	84705	2021	forward		v	M/A-HANP-072 82276	84306	2021	forward	×	NoE1-084	87211	84241	2021	forward
Metalloprotoses (Con GIL)	NoE1 085	MVA HAND 074	л х	NoE1.08	94700	04705	1776	roward		×	MVA HAND 074 94210	04300	1776	roward	~	NoE1 085	02211	96030	1776	rovorco
Entraffusion complex component (Con G2L)	NoE1 086	MVA HAND 075	л х	NoE1.08	06/05	00104	226	reverse	~	~	NoE1 096 96092	96417	226	reverse	~	NoE1 086	96017	06252	226	rovorco
M TE (late terresintian elementian fester) (Con C2B)	NoF1 087	MVA HAND 076		NoF1-08	00401	00010	330	fearrand	A		NoF1-080 80082	07072	530	ferward		NoF1-080	00017	00002	330	fearment
Chara havis The entries (Cone CAL)	NoF1-08/	MVA-HANF-0/0	X	NUF1-08	01606	8/4/2	003	Torward	X		NUF1-08/ 80411	8/0/3	003	TOrward	x	NOF1-087	80340	87008	003	Torward
Guitaredoxin-like protein (Cop-G4L)	NoF1-088	MVA-HANP-0//	X	N0F1-08	8/442	8/816	3/5	reverse	X		NOF1-088 8/043	8/41/	3/5	reverse	X	N0F1-088	869/8	8/352	3/5	reverse
PENT-like hucease (Cop-OSK)	NoF1-089	MVA-HAND 070	X	NOF1-08	8/819	89120	1308	Torward	X		NUF1-089 8/420	86/2/	1506	Torward	x	NOF1-089	8/300	88002	1308	forward
RNA polymerase subunit (RPO7) (Cop-G5.5K)	N0F1-090	MVA-HANP-0/9	X	NOF1-09	89134	89325	192	forward	X		N0F1-090 88735	88926	192	forward	X	N0F1-090	886/0	88861	192	forward
NLPc/P60 superfamily protein (Cop-G6R)	N0F1-091	MVA-HANP-080	х	NoF1-09	89327	89824	498	forward	X		NoF1-091 88928	89425	498	forward	x	NoF1-091	88863	89360	498	forward
Virion phosphoprotein, early morphogenesis (Cop-G/L)	NoF1-092	MVA-HANP-081	х	NoF1-09	89789	90904	1116	reverse	X		NoF1-092 89390	90505	1116	reverse	x	NoF1-092	89325	90440	1116	reverse
CC_Cop-G ORF B	overlap	-			_									_		+				
VLTF-1 (late transcription factor 1) (Cop-G8R)	NoF1-093	MVA-HANP-082	х	NoF1-09	90935	91717	783	forward	х		NoF1-093 90536	91318	783	forward	x	NoF1-093	90471	91253	783	forward
Entry/fusion complex component, myristylprotein (Cop-G9R)	NoF1-094	MVA-HANP-083	х	NoF1-09	91737	92759	1023	forward		х	MVA-HANP-08 91338	92360	1023	forward	х	NoF1-094	91273	92295	1023	forward
IMV membrane protein (Cop-L1R)	NoF1-095	MVA-HANP-084		x MVA-HANP	084 92760	93512	753	forward		х	VIVA-HANP-08 92361	93113	753	forward	х	NoF1-095	92296	93048	753	forward
Viral membrane assembly proteins (VMAP) (Cop-L2R)	NoF1-096	MVA-HANP-085	х	NoF1-09	93544	93810	267	forward		х	VIVA-HANP-08 93145	93408	264	forward	х	NoF1-096	93080	93346	267	forward
Internal virion protein (Cop-L3L)	NoF1-097	MVA-HANP-086	х	NoF1-09	93800	94852	1053	reverse		х	VIVA-HANP-086 93398	94450	1053	reverse	х	NoF1-097	93336	94388	1053	reverse
ss dsDNA binding protein (VP8) (Cop-L4R)	NoF1-098	MVA-HANP-087	х	NoF1-09	94877	95632	756	forward		х	VIVA-HANP-08 94475	95230	756	forward	х	NoF1-098	94413	95168	756	forward
Entry and Fusion IMV protein (Cop-L5R)	NoF1-099	MVA-HANP-088	х	NoF1-09	95642	96028	387	forward		х	MVA-HANP-088 95240	95626	387	forward	х	NoF1-099	95178	95564	387	forward
Virion morph (Cop-J1R)	NoF1-100	MVA-HANP-089	x	NoF1-10	95985	96446	462	forward		x	MVA-HANP-08 95583	96044	462	forward	x	NoF1-100	95521	95982	462	forward
Thymidine kinase (Cop-J2R)	NoF1-101	MVA-HANP-090	х	NoF1-10	96462	96995	534	forward		х	MVA-HANP-090 96060	96593	534	forward	x	NoF1-101	95998	96531	534	forward
Poly (A) polymerase small subunit (VP39) (Cop-J3R)	NoF1-102	MVA-HANP-091	х	NoF1-10	97063	98064	1002	forward	х	1	NoF1-102 96659	97660	1002	forward	x	NoF1-102	96599	97600	1002	forward
RNA polymerase subunit (RPO22) (Cop-J4R)	NoF1-103	MVA-HANP-092	х	NoF1-10	97979	98536	558	forward	x	1	NoF1-103 97575	98132	558	forward	x	NoF1-103	97515	98072	558	forward
IMV membrane protein (Cop-J5L)	NoF1-104	MVA-HANP-093	х	NoF1-10	98597	98998	402	reverse		x	MVA-HANP-093 98200	98601	402	reverse	x	NoF1-104	98133	98534	402	reverse
RNA polymerase subunit (RPO147) (Cop-I6R)	NoF1-105	MVA-HANP-094	x	NoF1-10	99105	102965	3861	forward		x	MVA-HANP-094 98707	102567	3861	forward	×	NoE1-105	98641	102501	3861	forward
Tyr/Ser phosphatase, IFN-gamma inhibitor (Cop-H1L)	NoF1-106	MVA-HANP-095	x	NoF1-10	102962	103477	516	reverse	x	<u> </u>	NoF1-106 102564	103079	516	reverse	x	NoE1-106	102498	103013	516	reverse
IMV membrane protein (Con-H2R)	NoF1-107	MVA-HANP-096	x	NoF1-10	103491	104060	570	forward	x	1	NoE1-107 103093	103662	570	forward	x	NoE1-107	103027	103596	570	forward
IMV henarin binding surface protein (Con-H3L)	NoF1-108	MVA-HANP-097	x	NoF1-10	104063	105037	975	reverse	x	1	NoE1-108 103665	104642	978	reverse	×	NoE1-108	103599	104576	978	reverse
					10.000	1 1000001				1	100 100000	10-10-12	1 270		~		1000000	10.070	575	

					1			· · · · ·		r r		1					r		· · · · · · · · · · · · · · · · · · ·				
RAP94 (RNA pol assoc protein) (Cop-H4L)	NoF1-109	MVA-HANP-098	х		NoF1-109	105038	107425	2388	reverse		х	VIVA-HANP-09	104643	107030	2388	reverse	х		NoF1-109	104577	106964	2388	reverse
VLTF-4 (late transcription factor 4) (Cop-H5R)	NoF1-110	MVA-HANP-099	х		NoF1-110	107611	108231	621	forward		х	VIVA-HANP-09	107216	107827	612	forward	х		NoF1-110	107150	107770	621	forward
DNA topoisomerase type I (Cop-H6R)	NoF1-111	MVA-HANP-100	х		NoF1-111	108232	109176	945	forward		х	MVA-HANP-10	107828	108772	945	forward	х		NoF1-111	107771	108715	945	forward
CPV-B-116	overlap	-																					
Viral membrane assembly proteins (VMAP) (Con-H7P)	NoF1-112	MVA-HAND-101		v	MVA-HAND-101	100212	100652	441	forward		v	M/A-HAND-10	109900	1002/0	441	forward	v	1	NoE1-112	109752	100102	441	forward
DNA is the second process (VMAA ) (COP-11/R)	N F1 112	MUA HAND 102		~	N 54 440	100210	105055	941	forward		~	NIVA-HAINP-10	100000	103243	441	forward	Ŷ		1401 1-112	100733	105155	441	forward
nikiva capping elizyne targe subunit (Cop-DTK)	NOF1-115	MVA-HANP-102	X		NOF1-113	109097	112231	2535	Torward		X	VIVA-HANP-10	109293	111827	2535	Torward	x	+	NOF1-113	109237	111//1	2535	Torward
virion core (Cop-D2L)	N0F1-114	MVA-HANP-105		X	MVA-HANP-10	112190	112630	441	reverse		X	MVA-HANP-10	111/86	112226	441	reverse	x		NOF1-114	111/30	1121/0	441	reverse
Virion core (Cop-D3R)	NoF1-115	MVA-HANP-104		x	MVA-HANP-104	112623	113324	702	forward		Х	MVA-HANP-10	112219	112920	702	forward	х		NoF1-115	112163	112876	714	forward
Uracil-DNA glycosylase, DNA polymerase processi vity factor (Cop-D4R)	NoF1-116	MVA-HANP-105		х	MVA-HANP-105	113324	113980	657	forward		х	MVA-HANP-10	112920	113576	657	forward	х		NoF1-116	112876	113532	657	forward
NTPase, DNA primase (Cop-D5R)	NoF1-117	MVA-HANP-106		х	MVA-HANP-10	114012	116369	2358	forward		х	MVA-HANP-10	113608	115965	2358	forward	х		NoF1-117	113564	115921	2358	forward
Morphogenesis, VETF-s (early transcription fact or small) (Cop-D6R)	N-E1 119	MUA HAND 107			0/A UAND 40	110110	110222	1014	6		х		110000	117010	1014	6			N=51 110	115050	117075	1014	6
DNA 1 (000010) (C DED)	NOP1-110	MUA-HAND 100		А.	VIVA-HAINP-10	110410	110325	1914	Torward			VIVA-HANP-10	110000	11/919	1914	loiwaiu		+	NUF1-118	113302	11/0/3	1914	loiwaiu
RNA polymerase subunit (RPO18) (Cop-D/R)	NoF1-119	MVA-HANP-108		X	MVA-HANP-108	118350	118835	486	forward		X	MVA-HANP-10	117946	118431	486	forward	X	+	NoF1-119	117902	118387	486	forward
Carbonic anhydrase GAG-hinding IMV membrane protein (Con-D8L)											x												
carbonic anifyticate, or to blicking into memorate protein (cop 1902)	NoF1-120	MVA-HANP-109		x	MVA-HANP-109	118798	119712	915	reverse		~	MVA-HANP-10	118394	119308	915	reverse	х		NoF1-120	118350	119264	915	reverse
mRNA decapping enzyme (Cop-D9R)	NoF1-121	MVA-HANP-110		х	MVA-HANP-110	119754	120395	642	forward		х	VIVA-HANP-11	119350	119991	642	forward	х		NoF1-121	119306	119947	642	forward
mRNA decapping enzyme (Cop-D10R)	NoF1-122	MVA-HANP-111		х	MVA-HANP-111	120392	121138	747	forward		х	VIVA-HANP-11	119988	120734	747	forward	х		NoF1-122	119944	120690	747	forward
ATPase, NPH1 (Con-D11L)	NoF1-123	MVA-HANP-112		x	MVA-HANP-112	121139	123034	1896	reverse		x	MVA-HANP-11	120735	122630	1896	reverse	×		NoF1-123	120691	122586	1896	reverse
mRNA canning enzyme small subunit (Con. D12L)	NoF1-124	MVA-HANP-113		x	MVA-HANP-11	123069	123932	864	reverse		x	MVA-HANP-11	122665	123528	864	reverse	v v	+ 1	NoF1-124	122620	123483	864	reverse
VV Ton unknum 16	ouerlap			~		125005	123332	004	Tereise		A.			120020	004	revense	^	+	1011124	ILLOLO	125405	004	Tereise
	N EL 105	-				100000	105.010	1050					100550	105011	1000			+		100511	105150	1000	
Trimeric virion coat protein (ritampicin res) ( Cop-D13L)	N0F1-125	MVA-HANP-114		X	MVA-HANP-114	123963	125618	1656	reverse	x		N0F1-125	123559	125214	1656	reverse	x		N0F1-125	123514	125169	1656	reverse
VLTF-2 (late transcription factor 2) (Cop-A1L)	NoF1-126	MVA-HANP-115		х	MVA-HANP-11	125642	126094	453	reverse	х		NoF1-126	125238	125690	453	reverse	х		NoF1-126	125193	125645	453	reverse
VLTF-3 (late transcription factor 3) (Cop-A2L)	NoF1-127	MVA-HANP-116		х	MVA-HANP-116	126115	126789	675	reverse	х		NoF1-127	125711	126385	675	reverse	х		NoF1-127	125666	126340	675	reverse
S-S bond formation pathway protein (Cop-A2.5L)	NoF1-128	MVA-HANP-117		х	MVA-HANP-11	126786	127016	231	reverse	х		NoF1-128	126382	126615	234	reverse	х		NoF1-128	126337	126570	234	reverse
P4b precursor (Cop-A3L)	NoF1-129	MVA-HANP-118		х	MVA-HANP-118	127031	128965	1935	reverse		х	MVA-HANP-11	126630	128564	1935	reverse	х		NoF1-129	126585	128519	1935	reverse
39kDa virion core protein (Con-A/L)	NoF1-130	MVA-HANP-110		v	MVA-HAND-110	120019	120926	910	reverse		v	M/A-HAND-11	129617	120425	910	reverse			NoE1-120	129572	120452	992	reverse
DNA asherence shurt (DDO10) (Con A5D)	N-E1 121	MVA-HAND 120		~	WWA-HAND 420	120074	120000	615	ferrend			NVA-HAND 43	120017	120007	405	ferward		+	NoT1-130	120372	120400	405	ferward
KINA polymerase subumi (KPO19) (Cop-A5K)	N0F1-131	MVA-HANF-120		X	VIVA-HANP-12	1298/4	130308	495	Torward		X	VIVA-HANP-12	129473	129907	495	Torward	x	+	NOF1-131	129491	129985	495	Torward
Viral membrane assembly proteins (VMAP), core protein (Cop-A6L)																							
	NoF1-132	MVA-HANP-121		x	MVA-HANP-121	130365	131483	1119	reverse	х		NoF1-132	129964	131082	1119	reverse	x		NoF1-132	129982	131100	1119	reverse
VETF-L (early transcription factor large) (Cop- A7L)	NoF1-133	MVA-HANP-122		х	MVA-HANP-122	131507	133639	2133	reverse	x		NoF1-133	131106	133238	2133	reverse	х		NoF1-133	131124	133256	2133	reverse
VITF-3 34kda subunit (Cop-A8R)	NoF1-134	MVA-HANP-123	х		NoF1-134	133693	134559	867	forward	х		NoF1-134	133292	134158	867	forward	х		NoF1-134	133310	134176	867	forward
Viral membrane associated, early morphogenesis protein (Cop-A9L)	NoF1-135	MVA-HANP-124	х		NoF1-135	134552	134899	348	reverse	х		NoF1-135	134151	134498	348	reverse	х		NoF1-135	134169	134516	348	reverse
P4a precursor (Cop. A10L)	NoF1-136	MVA_HANP_125	x		NoF1-136	134900	137581	2682	reverse		x	MVA-HANP-12	134499	137174	2676	reverse	v	-	NoF1-136	134517	137198	2682	reverse
Viral membrane country (IMAD) (Con A1 1D)	N-E1 127	MVA-HAND 126			NoF1 437	137500	137301	2002	ferrend			NVA-HAND 42	107100	130145	2070	ferward		+ 1	NoT1-130	104017	13/150	2002	ferward
Vian memorane assembly proteins (VMAP) (Cop-ATTR)	NOP1-137	MUA-HAND 127	л		NUF1-13/	13/390	130332	537	TOTWATU		Λ	VIVA-HAINP-12	13/109	130143	537	TOTWatu	~		NUF1-157	13/213	100740	537	TOTWaru
virion core and cleavage processing protein (Cop-A12L)	N0F1-138	MVA-HANP-127	x		N0F1-138	138554	139132	5/9	reverse	x		N0F1-138	13814/	138/28	582	reverse	x		NOF1-138	1381/1	138/49	5/9	reverse
IMV membrane protein, virion maturation (Cop-A13L)	NoF1-139	MVA-HANP-128	x		NoF1-139	139156	139368	213	reverse	x		NoF1-139	138752	138964	213	reverse	х		NoF1-139	138773	138985	213	reverse
Essential IMV membrane protein (Cop-A14L)	NoF1-140	MVA-HANP-129	x		NoF1-140	139476	139748	273	reverse	х		NoF1-140	139072	139344	273	reverse	х		NoF1-140	139093	139365	273	reverse
Non-essential IMV membrane protein (Cop-A14.5L)	NoF1-141	MVA-HANP-130	x		NoF1-141	139765	139926	162	reverse	x		NoF1-141	139361	139522	162	reverse	х		NoF1-141	139382	139543	162	reverse
Core protein (Cop-A15L)	NoF1-142	MVA-HANP-131	х		NoF1-142	139916	140200	285	reverse	х		NoF1-142	139512	139796	285	reverse	х		NoF1-142	139533	139817	285	reverse
Myristylated protein, essential for entrylfusion (Cop-A16L)	NoF1-143	MVA-HANP-132	х		NoF1-143	140184	141317	1134	reverse	х		NoF1-143	139780	140913	1134	reverse	х		NoF1-143	139801	140934	1134	reverse
IMV membrane protein (Con-A17I.)	NoF1-144	MVA-HAND-133	v		NoE1-144	1/1220	1/1029	609	reverse	v		NoE1-144	140916	141524	609	reverse	v	-	NoE1-144	140927	1/15/15	609	reverse
DNA haliassa transarint mhassa frator (Con A18P)	NoE1 145	MVA HAND 124	×		NoF1 14F	141042	142424	1493	forward	n v		NoF1 145	141520	142020	1492	forward	~	+	NoF1 145	141560	142041	1492	forward
DIVA neucase, transcript release factor (Cop-A18K)	N0F1-145	MVA-HANP-154	X		NOF1-145	141943	143424	1482	Torward	X		NOF1-145	141539	143020	1482	Torward	x	+	NOF1-145	141500	143041	1482	Torward
Zinc inger-like protein (Cop-A19L)	N0F1-146	MVA-HANP-155	X		N0F1-146	143405	143638	234	reverse	x		N0F1-146	143001	143234	234	reverse	x	4	NOF1-146	143022	143255	234	reverse
IMV membrane protain entrufficion complex component (Con. A211.)																							
INTV memorane protein, entryjusion compex component (Cop-7421E)	NoF1-147	MVA-HANP-136	x		NoF1-147	143639	143992	354	reverse	x		NoF1-147	143235	143588	354	reverse	х		NoF1-147	143256	143609	354	reverse
DNA polymerase processivity factor (Cop-A20R)	NoF1-148	MVA-HANP-137	х		NoF1-148	143991	145271	1281	forward	х		NoF1-148	143587	144867	1281	forward	х		NoF1-148	143608	144888	1281	forward
Holliday junction resolvase (Con-A22R)	NoF1-149	MVA-HANP-138	x		NoF1-149	145201	145764	564	forward	x		NoE1-149	144797	145360	564	forward	×		NoF1-149	144818	145381	564	forward
VITE 2 45kda aubunit (Con A22P)	NoF1 150	MVA HAND 120	×		NoF1 150	145704	146022	1140	forward	× ×		NoF1 140	145200	146500	1140	forward	~	+	NoF1 140	145401	146540	1140	forward
PNIA - 1	NOP1-150	MUA-HAND 140	л		NOF1-130	143704	140952	1149	Torwaru	л		NUF1-130	143500	140320	1145	loiwaiu		+	NUF1-130	143401	140349	1145	forwaru
KINA polymerase subunit (RPO152) (Cop-A24K)	N0F1-131	MVA-HANP-140	X		N0F1-151	140929	150423	3495	Torward		X	VIVA-HAMP-14	140549	120018	3471	Torward	x	+	NOF1-151	140540	150040	3495	Torward
A-type inclusion protein (Cop-A25L)	NoF1-152	MVA-HANP-141	x		NoF1-152	150401	154177	3777	reverse		х	VIVA-HANP-14	150024	150221	198	reverse	х		NoF1-152	150018	153794	3777	reverse
Unknown (CPV-B-160)	overlap	-										-											
P4c precursor (Cop-A26L)	NoF1-153	MVA_HANP_142 f	x		NoF1-153	154223	155791	1569	reverse		x	MVA-HANP-14	150807	151499	693	reverse	Y		NoF1-153	153840	155411	1572	reverse
D (V and a sector for a sector (Car. A 271.)	N-E1 154	MUA HAND 142			NoF1 155	455040	155151	2005	reverse				150007	151001	222	reverse		+ +	NoF1 155	155610	455705	2072	reverse
D GV MD V (G A 201)	NOP1-134	MUA-HAND 144	л		NOF1-134	133045	1301/3	333	leverse		λ	VIVA-HANP-14	151545	151001	335	reverse		+	NUF1-134	155405	155755	333	reverse
INIV MP/VIrus entry (Cop-A28L)	N0F1-155	MVA-HANP-144	X		N0F1-155	1561/6	156616	441	reverse		X	MVA-HANP-14	151882	152322	441	reverse	x		NOF1-155	155/96	156236	441	reverse
RNA polymerase subunit (RPO35) (Cop-A29L)	NoF1-156	MVA-HANP-145	х		NoF1-156	156617	157534	918	reverse		Х	MVA-HANP-14	152323	153240	918	reverse	х		NoF1-156	156237	157154	918	reverse
IMV protein (Cop-A30L)	NoF1-157	MVA-HANP-146	х		NoF1-157	157497	157727	231	reverse		х	VIVA-HANP-14	153203	153436	234	reverse	х		NoF1-157	157117	157347	231	reverse
Viral membrane assembly proteins (VMAP) (Cop-A30.5L)	NoF1-158	MVA-HANP-147	х		NoF1-158	157760	157888	129	reverse		х	MVA-HANP-14	153469	153597	129	reverse	х		NoF1-158	157380	157508	129	reverse
Hypothetical protein (Cop-A31R)	NoF1-159	MVA-HANP-148	х		NoF1-159	157887	158300	414	forward		х	MVA-HANP-14	153596	153973	378	forward	x		NoF1-159	157507	157920	414	forward
ATPase[DNA nackaging protein (Con. A32L)	NoF1-160	MVA-HANP-149	x		NoE1-160	158270	159079	810	reverse		x	MVA-HANP-14	153943	154752	810	reverse	v	-	NoE1-160	157890	158699	810	reverse
rin usprin pieruging protein (cop 1626)	11011 100		~		11011 100	1301/0	133073	010	icreise		A		100040	134732	010	revense	^	+ +	1011100	157050	150055	010	Teverse
EEV membrane phosphoglycoprotein, C-type lectin -like domain (Cop-A33R)	N. Et. 171	MUL HAND 150				150107	450770	676			х		45 40 70	155103						150013	450000	676	
	N0F1-161	MVA-HANP-150	x		N0F1-161	159197	159772	5/6	forward			MVA-HANP-15	154870	155427	558	forward	X	+	NOF1-161	158817	159392	5/6	forward
C-type lectin-like IEV/EEV glycoprotein (Cop-A34R)	NoF1-162	MVA-HANP-151	x		NoF1-162	159796	160302	507	forward		Х	MVA-HANP-15	155451	155957	507	forward	x		NoF1-162	159416	159922	507	forward
VV-Cop-A ORF M	overlap	-										-							·				L
MHC class II antigen presentation inhibitor (Cop-A35R)	NoF1-163	MVA-HANP-152	х		NoF1-163	160348	160878	531	forward		х	MVA-HANP-15	156001	156531	531	forward	х	Ţ	NoF1-163	159968	160498	531	forward
IEV transmembrane phosphoprotein (Cop-A36R)	NoF1-164	MVA-HANP-153	х		NoF1-164	160942	161610	669	forward		x	MVA-HANP-15	156598	157224	627	forward	х		NoF1-164	160562	161230	669	forward
Hypothetical protein (Cop-A37R)	NoF1-165	MVA-HANP-154	х		NoF1-165	161677	162468	792	forward		х	MVA-HANP-15	157288	158079	792	forward	x		NoF1-165	161297	162088	792	forward
Unknown (Gar-A43R)	NoF1-166		v		NoF1-166	162576	162761	186	forward									+ 1	NoF1-166	162106	162291	186	forward
CD47-like integral membrane protein (Con-A381.)	NoF1-167	MVA-HAND-155	A V		NoE1-167	162759	162501	924	reverse		v	AVA-HAND 15	159220	150172	924	reverse	÷	+ +	NoE1-167	162279	162211	924	reverse
CLP47-anc, anograf memorane protein (Cup-Abol.)	101-1-107	WINA-11/4/07-100	л		WOLT-T01	102/36	105391	034	reverse		А	NVA-HANP-15	. 130323	133112	034	reverse		+	NUF1-10/	1023/0	103211	034	reverse
Semanhorin (Con-A39R)	NoF1-168	MVA-HANP-156	х		NoF1-168	163607	164818	1212	forward		х	MVA-HANP-15	159189	159440	252	forward	х	+	NoF1-168	163227	164438	1212	forward
		MVA-HANP-157 f									х	MVA-HANP-15	159746	160378	633	forward			· '				

Letter here to (Con A40D)	N-E1 160	MUA HAND 150					405250	507	for a second	1			4 4 6 4 6 4	400040	507	Course of			11-54.400	464460	464040	402	fam.ed
Lectin nomolog (Cop-A40K)	N0F1-109	MVA-HANP-158		X	WVA-HANP-15	164844	165350	507	torward		X	MVA-HANP-15	58 160404	160910	507	torward	X		NOF1-169	164460	164942	483	Torward
Chemokine binding protein (Cop-A41L)	NoF1-170	MVA-HANP-159		X	MVA-HANP-15	5 165389	166048	660	reverse		Х	MVA-HANP-15	59 160949	161608	660	reverse	х		NoF1-170	165040	165702	663	reverse
Profilin-like protein, ATI-localized (Cop-A42R)	NoF1-171	MVA-HANP-160		х	MVA-HANP-16	6 166220	166606	387	forward		х	MVA-HANP-16	6 161780	162166	387	forward	х		NoF1-171	165881	166282	402	forward
Type I membrane glycoprotein (Cop-A43R)	NoF1-172	MVA-HANP-161		х	MVA-HANP-16	166644	167216	573	forward		х	MVA-HANP-16	162204	162776	573	forward	х		NoF1-172	166320	166901	582	forward
Hypothetical protein (Cop-A43.5R)	NoF1-173	MVA-HANP-162		х	MVA-HANP-16	167224	167460	237	forward		х	MVA-HANP-16	162784	163020	237	forward	х		NoF1-173	166904	167149	246	forward
3 beta-hydroxysteroid dehydrogenase delta 5->4 isomerase (Cop-A44L)	NoF1-174	MVA-HANP-163		x	MVA-HANP-16	167560	168600	1041	reverse		x	MVA-HANP-16	5 163120	164160	1041	reverse	x		NoF1-174	167241	168281	1041	reverse
Inactive Cu-Zn superoxide dismutase-like virion protein (Cop-A45R)	NoF1-175	MVA-HANP-164	x		NoF1-175	168647	169024	378	forward		x	MVA-HANP-16	4 164207	164572	366	forward	×		NoF1-175	168328	168705	378	forward
II - 1/TLR signaling inhibitor (Con. A46R)	NoE1-176	MVA-HANP-165	v		NoF1-176	16001/	160736	723	forward		v	MVA-HAND-16	164562	165284	723	forward			NoE1-176	168605	160/17	723	forward
Incertification and the second	NoF1-170	MVA HAND 166	A		NoF1-170	103014	170501	723	TOTWATU		A	WWA-HAND 10	104302	100204	717	TOTWATU			NoF1-170	100053	100417	725	TOTWATU
minimoprevalent protein (Cop-A47L)	NOF1-1//	MVA-HAINF-100	λ		NUF1-1//	109672	1/0591	720	leverse		Å	VIVA-HAINP-10	105352	100046	/1/	leverse	x		NOF1-1//	109555	1/028/	/35	reverse
Inymidylate kinase (Cop-A48R)	N0F1-1/8	MVA-HANP-16/		X	MVA-HANP-16	1/0690	1/1304	615	forward		X	MVA-HANP-16	16614/	166/61	615	forward	х		NOF1-1/8	1/0160	1/1002	843	forward
Putative phosphotransferase anion transport pro tein (Cop-A49R)	NoF1-179	MVA-HANP-168		x	MVA-HANP-16	171328	171816	489	forward		х	WVA-HANP-16	166785	167273	489	forward	x		NoF1-179	171051	171539	489	forward
ATP-dependent DNA ligase (Cop-A50R)	NoF1-180	MVA-HANP-169		х	MVA-HANP-16	171848	173506	1659	forward		X	MVA-HANP-16	167305	168963	1659	forward	х		NoF1-180	171572	173236	1665	forward
Hypothetical protein (Con-A51R)	NoF1-181	MVA-HANP-170		x	MVA-HANP-17	173559	174716	1158	forward		x	MVA-HANP-17	169009	170154	1146	forward	×		NoF1-181	173289	174293	1005	forward
Toll[IL-1 receptor-like protein, IL-1, NFkB signalling inhibitor (Cop-A52R)	NoF1-182	-										-					x		NoF1-182	174362	174934	573	forward
TNF receptor (CrmC) (Cop-A53R)	-	-										-											
CPV-B-192	NoF1-183	-										-					х		NoF1-183	175698	175868	171	forward
BTB Kelch-domain containing protein; CRL complex (Cop-A55R)	N-E1 104																		N-54.404	470070	477762	4600	(
	N0F1-184	-			_							-					х		NOF1-184	1/60/2	1///63	1692	forward
Hemagglutinin (Cop-A56R)	NoF1-185	MVA-HANP-171									Х	MVA-HANP-17	173477	174424	948	forward	х		NoF1-185	177815	178729	915	forward
Guanylate kinase (Cop-A56.5R)	NoF1-186	MVA-HANP-172 f		х	MVA-HANP-17	176149	176442	294	forward		х	MVA-HANP-17	174720	175013	294	forward	х		NoF1-186	178746	179339	594	forward
Ser/Thr Kinase (Cop-B1R)	NoF1-187	MVA-HANP-173		х	MVA-HANP-17	176593	177495	903	forward		х	MVA-HANP-17	175164	176066	903	forward	х		NoF1-187	179489	180388	900	forward
		MVA HAND 174 f		v	AVA HAND 17	177624	177024	201	forward		x	AVA HAND 17	176205	176405	201	forward	,		NoE1 199	100450	101075	1510	forward
Saklafan (Can B2B)	NoE1 199	WIVA-HAINF-1/4		λ	VIVA-HAINP-1/	1//054	1//924	291	TOTWATU		~	VIVA-HAINP-17	1/0205	1/0495	291	TOTWATU	x		NUF1-100	160406	1819/5	1519	TOTWATU
Schalen (Cop-B2R)	NOF1-100	MVA-HANP-175		х	MVA-HANP-17	177779	178210	432	forward		Х	MVA-HANP-17	176350	176781	432	forward							L
		MVA-HANP-176		х	MVA-HANP-17	178407	178946	540	forward		х	MVA-HANP-17	176978	177517	540	forward							
		MVA-HANP-177 f		x	MVA-HANP-17	179173	179706	534	forward		х	MVA-HANP-17	177744	178277	534	forward	×		NoF1-189	182239	183924	1686	forward
Ankyrin (Cop-B4R)	N E1 100	MUL HAND 170 f																					
	N0F1-189	MVA-HANP-1/8		X	MVA-HANP-1/	1/959/	180826	1230	forward		X	MVA-HANP-1/	1/8168	1/939/	1230	forward							
EEV type-1 membrane glycoprotein, protective an tigen (Cop-B5R)	NoF1-190	MVA-HANP-179		X	MVA-HANP-17	180914	181867	954	forward		Х	MVA-HANP-17	179485	180438	954	forward	х		NoF1-190	184028	184981	954	forward
Ankyrin-like protein (Cop-B6R)	NoF1-191	MVA-HANP-180		х	MVA-HANP-18	30 181964	182485	522	forward		Х	WVA-HANP-18	180535	181056	522	forward	х		NoF1-191	185080	185379	300	forward
Virulence, ER resident (Cop-B7R)	NoF1-192	MVA-HANP-181		х	MVA-HANP-18	182523	183056	534	forward		х	WVA-HANP-18	181094	181627	534	forward	х		NoF1-192	185653	186198	546	forward
Soluble IFN-g receptor-like protein (Cop-B8R)	NoF1-193	MVA-HANP-182 f		x	MVA-HANP-18	183111	183814	704	forward		х	MVA-HANP-18	181682	182362	681	forward	x		NoF1-193	186250	187050	801	forward
FR-localized anontosis regulator (Con-B9R)	NoE1-194	MVA-HANP-183	v		NoF1-194	183800	184627	738	forward		v	M/A-HAND-19	197510	182737	210	forward	v		NoE1-104	187071	197909	738	forward
Kalch like protein (Con B10B)	NoE1 105	MVA HAND 184	×		NoE1 105	104774	196270	1500	forward		v		192700	102700	501	forward			NoF1 105	107055	100460	1506	forward
Henethetical protein (Cop-B10K)	NoF1 106	MVA HAND 105	л 		NoF1-193	104774	1002/5	1300	feeward			NaC1 10C	102700	103200	225	forward			NoF1-193	10/533	100700	1300	forward
nypotietical protein (Cop-BTTR)	NOF1-190	MVA-HAINF-165	λ		N0F1-196	100301	C9C001	225	TOrward	Å		NOF1-190	103202	102200	225	TOrward	x		NOF1-190	169542	169/00	225	Torward
Serif In Kmase (Cop-B12R)	NoF1-19/	MVA-HANP-186 MVA-HANP-187	x		NoF1-197 NoF1-198	186652 187612	187515 188646	864 1035	forward forward	x		NoF1-197 NoF1-198	183573 184533	184436 185567	864	forward forward	x		NoF1-197 NoF1-198	189833 190793	190696 191827	864 1035	forward forward
Serpin 1,2,3 (Cop-K2L)	N0F1-198	MVA-HAND-188 f																					
Henothetical protain (Con C161)	NoE1 100	MVA HAND 180	×		NoE1 100	100777	190226	450	forward	v		NoE1 100	105,600	196147	450	forward	~		NoE1 100	101059	102407	450	forward
Typoliteitai piotein (Copie Tol.)	NOT-1-199	MVA-HAND 100	А		NOF1-199	100///	105220	430	Torward	Λ		NOF 1-135	103050	10014/	430	Torwaru	^		NUF1-135	191930	152407	430	Torward
IL-1 beta receptor (Cop-B16R)	N0F1-200	MVA-HANP-190	X		N0F1-200	189310	190287	9/8	forward	X		NOF1-200	186231	18/208	9/8	forward	х		NOF1-200	192491	193468	9/8	forward
IL-1 beta inhibitor (Cop-B1/L)	NoF1-201	MVA-HANP-191	X		NoF1-201	190335	191357	1023	reverse	X		NoF1-201	187256	188278	1023	reverse	X		NoF1-201	193516	194538	1023	reverse
Ankyrin (Cop-B18R)	NoF1-202	MVA-HANP-192	Х		NoF1-202	191499	193223	1725	forward	Х		NoF1-202	188420	190144	1725	forward	х		NoF1-202	194680	196404	1725	forward
IFN-alpha beta receptor glycoprotein (Cop-B19R)	NoF1-203	MVA-HANP-193 f	х		NoF1-203	193242	194339	1098	forward	х		NoF1-203	190163	191260	1098	forward	х		NoF1-203	196423	197520	1098	forward
Ankyrin (Cop-B20R)	NoF1-204	-	х		NoF1-204	194400	196757	2358	forward	х		NoF1-204	191321	193678	2358	forward	х		NoF1-204	197581	199938	2358	forward
CPV-B-214	overlap	-										overlap											
kelch-like protein (EVM-167)	NoF1-205		x		NoF1-205	196860	198533	1674	forward	x		NoF1-205	193781	195454	1674	forward	×		NoF1-205	200041	201714	1674	forward
Hypothetical protein (Con-C11 5B)	-	-	A		11011 200	1,0000	130333	10/4	lonnara			110/1200	133701	155151	10/1	Torward	~		1011 205	200012	201/14	10/4	- Ioimaia
Semin 1.2.2 (Con K21)	NoE1 206	-			No.51 200	100710	100033	1110	fearmand			No.51 200	105/24	10(742	1110	feerward			No.51 200	201004	202002	1110	feerward
Serpin 1,2,3 (Cop-K2L)	N0F1-206	-	X		N0F1-206	198/13	199822	1110	forward	X		N0F1-206	195634	196/43	1110	forward	X		N0F1-206	201894	203003	1110	forward
nypomeucal protein (Cop-C14L)	NOP1-20/	-	X	I	NOF1-207	TAAAAA	200580	582	Torward	х	+	NOF1-207	196920	19/201	582	Torward	x		NOF1-20/	203180	203/61	582	torward
Surface glycoprotein	NoF1-208	MVA-HANP-194	х		NoF1-208	200826	206591	5766	forward	х		NoF1-208	197747	203512	5766	forward	х		NoF1-208	204007	209772	5766	forward
Ankyrin (Cop-C19L)	NoF1-209	-	х		NoF1-209	206808	208613	1806	forward	х		NoF1-209	203729	205534	1806	forward	х		NoF1-209	209989	211794	1806	forward
TNF receptor (CrmD)	NoF1-210	-	х		NoF1-210	208620	209588	969	forward	х		NoF1-210	205541	206509	969	forward	х		NoF1-210	211801	212769	969	forward
Hypothetical protein (Cop-C16L)	NoF1-211	MVA-HANP-195	х		NoF1-211	210267	210723	462	forward	х		NoF1-211	207183	207644	462	forward	х		NoF1-211	213443	213904	462	forward
A set and a set		MVA HAND 106 f			NoE1 212	210020	212042	2007	forward			NoE1 212	207950	200907	2007	forward	ÿ		NoE1 212	214110	216125	2007	forward
Ankyrin (Cop-C17L)	NoF1-212	www.a-mAINP-190	х		INUF1-212	210930	212942	2007	rorward	х	+	INUF 1-212	20/859	209805	2007	iorWard	x	+	NOF1-212	214119	210125	2007	iorward
		MVA-HANP-197									1					1	1				<u> </u>		<u> </u>
Ankyrin-like repeat containing protein	NoF1-213	-	х		NoF1-213	212982	213071	90	forward	х		NoF1-213	209905	209994	90	forward	х		NoF1-213	216165	216254	90	forward
Ankyrin (Cop-C19L)	NoF1-214	MVA-HANP-198 f	х		NoF1-214	213153	214919	1767	forward	х		NoF1-214	210076	211842	1767	forward	x		NoF1-214	216336	218102	1767	forward
TNF receptor (CrmB) (Con-C22L)	NoF1-215	-	x		NoF1-215	214997	216070	1074	forward	x	1	NoF1-215	211920	212992	1074	forward	v	1	NoF1-215	218180	219252	1074	forward
Chamokina hinding protain (Con C22L)	NoF1 216	MUA HAND 100 f	-		Nord 240	24/444	210070	720	farmer	-	1	Nord 240	212007	21200	730	fag			Nort 215	210227	220200	720	farmed
Chemokine bilding protein (Cop-C25L)	NOF1-216	MVA-HANP-199	х		N0r1-216	216144	210881	/38	Torward	х	-	N0⊧1-216	21306/	213804	/38	torward	x	-	NOF1-216	21932/	220064	/38	torward
CPV-B-002	NoF1-217	-	х		NoF1-217	216910	217137	228	forward	х	1	NoF1-217	213833	214060	228	forward	х	1	NoF1-217	220093	220320	228	forward

	CPXV-No-F1	MVA-HANP				R4							R5							R6			-
Function	CDS	CDS	CPXV- NoF1	MVA- HANP	CDS	Start	Stop	Length	Direction	CPXV- NoF1	MVA- HANP	CDS	Start	Stop	Length	Direction	CPXV- NoF1	MVA- HANP	CDS	Start	Stop	Length	Direction
CPV-B-002	NoF1-001	-			NoF1-001	670	872	203	reverse	х		NoF1-001	778	1005	228	reverse	x		NoF1-001	1328	1555	228	reverse
Chemokine binding protein (Cop-C23L)	NoF1-002	MVA-HANP-001 f	x		NoF1-002	901	1626	726	reverse	x		NoF1-002	1034	1771	738	reverse	x		NoF1-002	1584	2321	738	reverse
CPV-B-004	overlap	-																					
TNF receptor (CrmB) (Cop-C22L)	NoF1-003	-	х		NoF1-003	1700	2773	1074	reverse	x		NoF1-003	1845	2918	1074	reverse	x		NoF1-003	2395	3468	1074	reverse
Ankyrin (Cop-C19L)	NoF1-004	MVA-HANP-002 f	х		NoF1-004	2851	4617	1767	reverse	x		NoF1-004	2996	4762	1767	reverse	x		NoF1-004	3546	5312	1767	reverse
Ankyrin-like repeat containing protein	NoF1-005		х		NoF1-005	4699	4788	90	reverse	x		NoF1-005	4844	4933	90	reverse	x		NoF1-005	5394	5483	90	reverse
Ankyrin (Cop-C17L)	NoF1-006	MVA-HANP-003 <sup>f</sup> MVA-HANP-004 <sup>f</sup>	x		NoF1-006	4828	6834	2007	reverse	x		NoF1-006	4973	6979	2007	reverse	x		NoF1-006	5523	7529	2007	reverse
Hypothetical protein (Con-C16L)	NoF1-007	MVA-HANP-005	×		NoF1-007	7051	7512	462	reverse	×		NoE1-007	7194	7655	462	reverse	×		NoE1-007	7746	8207	462	reverse
Alpha amanatin target protein (Con-N2L)	NoF1-008		x		NoF1-008	7683	8336	654	reverse	x		NoF1-008	7826	8479	654	reverse	x		NoF1-008	8378	9031	654	reverse
BTB Kelch-domain containing protein; CRL complex (Cop-A55R)	NOF1-009	-	x		NOF1-009	8649	9242	594	reverse	x		NOF1-009	8792	9385	594	reverse	x		NOF1-009	9344	9937	594	reverse
Ankyrin (Cop-B20R)	NoF1-010	-	х		NoF1-010	9569	11584	2016	reverse	х		NoF1-010	9712	11727	2016	reverse	х		NoF1-010	10264	12279	2016	reverse
C-type lectin domain containing protein	NoF1-011	-	х		NoF1-011	11811	12020	210	reverse	х		NoF1-011	11954	12163	210	reverse	х		NoF1-011	12506	12715	210	reverse
BTB Kelch-domain containing protein; CRL complex (Cop-A55R)	NoF1-012	-	х		NoF1-012	12448	13059	612	reverse	х		NoF1-012	12591	13202	612	reverse	x		NoF1-012	13143	13754	612	reverse
TNF receptor (CrmB) (Cop-C22L)	NoF1-013	-	х		NoF1-013	13134	13742	609	reverse	х		NoF1-013	13277	13885	609	reverse	х		NoF1-013	13829	14437	609	reverse
TNF-alpha receptor like protein	NoF1-014	-	х		NoF1-014	13739	14071	333	reverse	x		NoF1-014	13882	14214	333	reverse	х		NoF1-014	14434	14766	333	reverse
Ankyrin (Cop-B18R)	NoF1-015	-	х		NoF1-015	14146	16449	2304	reverse	x		NoF1-015	14289	16592	2304	reverse	x		NoF1-015	14841	17144	2304	reverse
Ankyrin (CPXV-017)	NoF1-016	-	x		NoF1-016	16725	18032	1308	reverse	x		NoF1-016	16868	18175	1308	reverse	x		NoF1-016	17420	18727	1308	reverse
MPV-Z-N3K Ankurin (Con P19P)	NoF1-017	-	x		N0F1-017	18131	18646 21224	516	reverse	x		NOF1-017	182/4	18/89	516	reverse	x		NOF1-017	18826	19341	516	reverse
Aikyrii (Cop-B18K)	NoF1-018 NoF1-010	-	x		NOF1-018	18/09	21324	2010	reverse	x		NoF1-018	18852	21467	2010	reverse	x		NoF1-018	19404	22019	2010	reverse
Secreted EGE-like protein (Con-C11R)	NoF1=019	MVA-HANP-006	x		NoF1-019	21572	21090	426	forward	×		NoF1-019	21313	22035	426	forward	×		NoF1-019	22007	22303	426	forward
IL-1 receptor antagonist (Cop-C10L)	NoF1-020	MVA-HANP-007	x		NoF1-021	22635	23630	996	reverse	x		NoF1-020	22778	23773	996	reverse	×		NoF1-020	23330	24325	996	reverse
Zinc finger-like protein	NoF1-022	MVA-HANP-008 f	x		NoF1-022	24145	24873	729	forward	x		NoF1-022	24288	25016	729	forward	x		NoF1-022	24840	25568	729	forward
Soluble IL-18 binding protein (Bsh-D7L)	NoF1-023	MVA-HANP-009	х		NoF1-023	25022	25402	381	reverse	x		NoF1-023	25165	25545	381	reverse	х		NoF1-023	25717	26097	381	reverse
		MVA-HANP-010 <sup>f</sup>	x		NoF1-024	25461	27476	2016	reverse	×		NoF1-024	25604	27619	2016	reverse	×		NoF1-024	26156	28171	2016	reverse
		MVA-HANP-011 f																					
Ankvrin/Host Range (Bang, D8I.)	NoF1-024	MVA HAND 012 f																					
randynalizou range (Dang 2012)	11011 021	MVA-HANF-012																					-
		MVA-HANP-015																					
ANIV	N-E1 025	MVA-HANP-014			N-51 025	27500	27704	102				N-51 025	27722	27024	102				N-51 005	20205	20470	102	
ANK-containing protein	N0F1-025	MVA-HAINP-015	x		N0F1-025	2/590	2//81	192	reverse	x		N0F1-025	2//33	2/924	192	reverse	x		N0F1-025	28285	28476	192	reverse
Asharin Terra LIEN societares (Con COL)	N-E1 026	MVA-HANP-016	x		NOF1-026	2/955	29859	1905	reverse	x		N0F1-026	28098	30002	1905	reverse	x		N0F1-026	28650	30554	1905	reverse
Ankynii, Type I IPN resistance (Cop-C9L)	NOF1-020	MVA-HANP-017																					
		MVA-HANP-018																					
Unknown (Cop-C8L)	NoF1-02/	MVA-HANP-019	x		NoF1-027	29901	30458	558	reverse	x		NoF1-027	30044	30601	558	reverse	x		NoF1-027	30596	31153	558	reverse
Pal 2 lika protein JEN hata inhibitor (Con C6L)	NoF1-028	MVA HAND 021	x		NOF1-028	30530	30982	453	reverse	x		NOF1-028	300/3	31125	455	reverse	x		NoF1-028	31225	310//	453	reverse
Kelch-like protein (Cop-C5L)	overlap	WIVA-HAINP-021	x		N0F1-029	31213	31080	408	reverse	x		N0F1-029	31350	31823	408	reverse	x		N0F1-029	31908	32375	408	reverse
Kelch-like protein (Cop-C5L)	NoF1-030		x		NoF1-030	32013	32390	378	reverse	×		NoF1-030	32156	32533	378	reverse	×		NoF1-030	32708	33085	378	reverse
IL-1 receptor antagonist (Cop-C10L)	NoF1-031	-	x		NoF1-031	32451	33398	948	reverse	x		NoF1-031	32594	33541	948	reverse	x		NoF1-031	33146	34093	948	reverse
Complement binding (secreted) (Cop-C3L)	NoF1-032	-	х		NoF1-032	33465	34259	795	reverse	x		NoF1-032	33608	34402	795	reverse	х		NoF1-032	34160	34954	795	reverse
POZ BTB Kelch domain protein (Cop-C2L)	NoF1-033	-	х		NoF1-033	34322	35860	1539	reverse	х		NoF1-033	34465	36003	1539	reverse	х		NoF1-033	35017	36555	1539	reverse
Putative TLR signalling inhibitor (Cop-C1L)	NoF1-034	-	х		NoF1-034	35929	36567	639	reverse	х		NoF1-034	36072	36710	639	reverse	x		NoF1-034	36624	37262	639	reverse
Anti-apoptotic Bcl-2-like protein (Cop-N1L)	NoF1-035	MVA-HANP-022 f	х		NoF1-035	36609	36962	354	reverse	x		NoF1-035	36752	37105	354	reverse	x		NoF1-035	37304	37657	354	reverse
Alpha amanatin target protein (Cop-N2L)	NoF1-036	MVA-HANP-023	х		NoF1-036	37084	37614	531	reverse	х		NoF1-036	37227	37757	531	reverse	х		NoF1-036	37779	38309	531	reverse
ANK-containing protein; apoptosis inihibitor (Cop-M1L)	NoF1-037	-	x		NoF1-037	37657	39072	1416	reverse	x		NoF1-037	37800	39215	1416	reverse	x		NoF1-037	38352	39767	1416	reverse
NFkB inhibitor (Cop-M2L)	NoF1-038	-	x		NoF1-038	39050	39712	663	reverse	x		NoF1-038	39193	39855	663	reverse	x		NoF1-038	39745	40407	663	reverse
Ankyrin NFkB inhibitor (Cop-K1L)	NoF1-039	MVA-HANP-024	х		NoF1-039	39836	40693	858	reverse	x		NoF1-039	39979	40836	858	reverse	x		NoF1-039	40531	41388	858	reverse
Serpin 1,2,3 (Cop-K2L)	NoF1-040	MVA-HANP-025	х		NoF1-040	41051	42172	1122	reverse	x		NoF1-040	41194	42315	1122	reverse	x		NoF1-040	41746	42867	1122	reverse
IFN resistance, PKR/eIF-aipna innibitor (Cop-K3 L)	NoF1-041	MVA-HANP-026	x		N0F1-041	42223	42489	267	reverse	x		NOF1-041	42366	42632	26/	reverse	x		NOF1-041	42918	43184	267	reverse
Phospholipase-D-like protein (Cop-K4L)	N0F1-042	MVA-HANP-02/	x		N0F1-042	42549	43823	12/5	reverse	x		N0F1-042	42692	43966	1275	reverse	x		N0F1-042	43244	44518	12/5	reverse
Monoglyceride lipase (Cop-K5L/K6L)	NoF1-043	MVA-HANP-028 <sup>°</sup> MVA-HANP-029 <sup>°f</sup>	x		NoF1-043	43851	44681	831	reverse	x		NoF1-043	43994	44824	831	reverse	x		NoF1-043	44546	45376	831	reverse
Host immune response repressor (Cop-K7R)	NoF1-044	MVA-HANP-030	х		NoF1-044	44819	45268	450	forward	x		NoF1-044	44962	45411	450	forward	x		NoF1-044	45514	45963	450	forward
CPV-B-04/ Caspase-9 (apoptosis) inhibitor (mitochondrial- associated) (Cop-F1L)	overlap NoF1-045	- MVA-HANP-031	v		NoF1-045	45347	460.85	744	reverse	v		NoF1-045	45485	46778	744	reverse	v		NoE1-045	46037	46780	744	reverse
dUTPase (Cop-F2L)	NoF1-046	MVA-HANP-032	x		NoF1-046	46085	46528	444	reverse	×		NoF1-046	46228	46671	444	reverse	×		NoF1-045	46780	47223	444	reverse
Kelch-like protein (Cop-F3L)	NoF1-047	MVA-HANP-033	x		NoF1-047	46552	47994	1443	reverse	x		NoF1-047	46695	48137	1443	reverse	x		NoF1-047	47247	48689	1443	reverse
Ribonucleotide reductase small subunit (Cop-F4L)	NoF1-048	MVA-HANP-034	х		NoF1-048	48005	49006	1002	reverse	x		NoF1-048	48148	49149	1002	reverse	x		NoF1-048	48700	49701	1002	reverse
26bb min maker antis (Car ESI)	N-E1.040	MVA-HANP-035 f	x		NoF1-049	48996	49961	966	reverse	x		NoF1-049	49139	50104	966	reverse	×		NoF1-049	49691	50656	966	reverse
Sokia major menurate protein (Cop-15L)	1101-1-049	MVA-HANP-036 f																					

Hypothetical protein (Cop-F6L)	NoF1-050	MVA-HANP-037	x	NoF1-050	49991	50206	216	reverse	х		NoF1-050	50134	50349	216	reverse	х	NoF1-050	50686	50901	216	reverse
Hypothetical protein (Cop-F7L)	NoF1-051	MVA-HANP-038	х	NoF1-051	50222	50467	246	reverse	х		NoF1-051	50365	50610	246	reverse	х	NoF1-051	50917	51162	246	reverse
Cytoplasmic protein (Cop-F8L)	NoF1-052	MVA-HANP-039	х	NoF1-052	50765	50962	198	reverse	х		NoF1-052	50765	50962	198	reverse	х	NoF1-052	51449	51646	198	reverse
S-S bond formation pathway protein substrate (Cop-F9L)	NoF1-053	MVA-HANP-040	x	NoF1-053	51023	51661	639	reverse	х		NoF1-053	51023	51661	639	reverse	х	NoF1-053	51707	52345	639	reverse
Essential Ser/Thr kinase morph (Cop-F10L)	NoF1-054	MVA-HANP-041	x	NoF1-054	51648	52967	1320	reverse	x		NoF1-054	51648	52967	1320	reverse	х	NoF1-054	52332	53651	1320	reverse
VV. Con-E ORE D	overlap		~																		
TT_OOPT ON D	oterap	MUA HAND 042		11.54.055	52000	54054	4000				11.54.055	52000	54054	4055			11.54.055	50674	64720	1075	
RhoA signalling inhibitor, virus release protei n (Cop-F11L)		MVA-HANP-042	x	N0F1-055	52990	54054	1065	reverse	X		N0F1-055	52990	54054	1065	reverse	X	N0F1-055	556/4	54/38	1065	reverse
	NoF1-055	MVA-HANP-043																			
EEV maturation protein (Cop-F12L)	NoF1-056	MVA-HANP-044	х	NoF1-056	54097	56001	1905	reverse	х		NoF1-056	54097	56001	1905	reverse	х	NoF1-056	54781	56685	1905	reverse
Palmitylated EEV membrane glycoprotein (Cop-F13 L)	NoF1-057	MVA-HANP-045	х	NoF1-057	56035	57153	1119	reverse	х		NoF1-057	56035	57153	1119	reverse	х	NoF1-057	56719	57837	1119	reverse
Unknown (Cop-F14L)	NoF1-058	MVA-HANP-046	х	NoF1-058	57171	57392	222	reverse	х		NoF1-058	57171	57392	222	reverse	х	NoF1-058	57855	58076	222	reverse
IMV protein (Cop-F14.5L)	-	MVA-HANP-047																			
CPV-B-063	NoF1-059	-	х	NoF1-059	57439	57597	159	forward	х		NoF1-059	57439	57597	159	forward	х	NoF1-059	58123	58281	159	forward
Unknown conserved protein (Cop-F15L)	NoF1-060	MVA-HANP-048	х	NoF1-060	57665	58141	477	reverse	х		NoF1-060	57665	58141	477	reverse	х	NoF1-060	58349	58825	477	reverse
Non-functional Serine Recombinase (Con-F16L)	NoF1-061	MVA-HANP-049	x	NoF1-061	58141	58842	702	reverse	x		NoF1-061	58141	58842	702	reverse	x	NoF1-061	58825	59526	702	reverse
DNA-binding phosphonrotein (VP11): mTOR antagonist (Con-E17R)	NoF1-062	MVA-HANP-050	x	NoF1-062	58905	59210	306	forward	×		NoF1-062	58905	59210	306	forward	x	NoF1-062	59589	59894	306	forward
Poly (A) polymerase catalytic subunit (VP55) (Con-FIL)	NoF1-063	MVA-HANP-051	x	NoF1-062	50207	60646	1440	reverse	v		NoF1-062	50207	60646	1440	reverse	×	NoF1-062	50901	61330	1440	reverse
IEV morphogenesis (Con-F2L)	NoF1-064	MVA-HANP-052	x	NoF1-064	60643	62856	2214	reverse	Ŷ		NoF1-064	60643	62856	2214	reverse	×	NoF1-064	61327	63540	2214	reverse
deDNA hinding metain IEN maintenee/DVD inhibitor (7 DNA hinding) (Con	101-1-004	MWA-HANT-052	~	N0F1*004	00045	02030	2214	leverse			NOF1-004	00045	02030	2214	reverse		N0F1*004	01327	05340	2214	reverse
dskivA-bliding protein, iFN resistance/FKK initolioi (Z-DIVA bliding) (Cop-	N 51 0/5																				
E3L)	NoF1-065	MVA-HANP-053	х	N0F1-065	62987	63559	5/3	reverse	х		NOF1-065	62987	63559	5/3	reverse	Х	NOF1-065	636/1	64243	5/3	reverse
RNA polymerase subunit (RPO30) (Cop-E4L)	NoF1-066	MVA-HANP-054	х	NoF1-066	63614	64399	786	reverse	х		NoF1-066	63614	64399	786	reverse	х	NoF1-066	64298	65083	786	reverse
Virosome component (Cop-E5R)	NoF1-067	MVA-HANP-055	х	NoF1-067	64519	65472	954	forward	х		NoF1-067	64519	65472	954	forward	х	NoF1-067	65203	66156	954	forward
Virion protein (Cop-E6R)	NoF1-068	MVA-HANP-056	х	NoF1-068	65592	67295	1704	forward	х		NoF1-068	65592	67295	1704	forward	х	NoF1-068	66276	67979	1704	forward
Myristylated protein (Cop-E7R)	NoF1-069	MVA-HANP-057	х	NoF1-069	67357	67854	498	forward	х		NoF1-069	67357	67854	498	forward	х	NoF1-069	68041	68538	498	forward
ER-localized membrane protein, virion core protein (Cop-E8R)	NoF1-070	MVA-HANP-058	х	NoF1-070	67965	68786	822	forward	х		NoF1-070	67965	68786	822	forward	х	NoF1-070	68649	69470	822	forward
DNA polymerase (Cop-E9L)	NoF1-071	MVA-HANP-059	x	NoF1-071	68793	71810	3018	reverse	х		NoF1-071	68793	71810	3018	reverse	х	NoF1-071	69477	72494	3018	reverse
Sulfhydryl oxidase (FAD-linked) (Cop-E10R)	NoF1-072	MVA-HANP-060	х	NoF1-072	71842	72129	288	forward	х		NoF1-072	71842	72129	288	forward	х	NoF1-072	72526	72813	288	forward
Virion core protein (Cop-El IL)	NoF1-073	MVA-HANP-061	x	NoF1-073	72124	72513	390	reverse	х		NoF1-073	72124	72513	390	reverse	х	NoF1-073	72808	73197	390	reverse
		MVA-HANP-062 f	x	NoE1-074	72500	7/15/00	2001	reverse	v		NoE1-074	72500	7/15/00	2001	reverse	v	NoE1-074	7218/	75194	2001	reverse
Membrane protein (Cop-O1L)	NoF1-074	MULTINE OCT	~	11012 074	72300	74300	2001	Teverse	~		11011074	72300	74500	2001	Tereise	~	110/110/4	75104	73104	2001	Tevelse
		MVA-HANP-063																			
Glutaredoxin I (Cop-O2L)	NoF1-0/5	MVA-HANP-064	х	NoF1-075	74548	74874	327	reverse	х		NoF1-075	74548	74874	327	reverse	Х	NoF1-075	75232	75558	327	reverse
Virus entry/tusion complex component (Cop-O3L)	NoF1-076	MVA-HANP-065	x	NoF1-076	74898	75005	108	reverse	х		NoF1-076	74898	75005	108	reverse	Х	NoF1-076	75582	75689	108	reverse
DNA-binding core protein (Cop-IIL)	NoF1-077	MVA-HANP-066	х	NoF1-077	75020	75958	939	reverse	х		NoF1-077	75020	75958	939	reverse	х	NoF1-077	75704	76642	939	reverse
IMV membrane protein (Cop-I2L)	NoF1-078	MVA-HANP-067	х	NoF1-078	75965	76186	222	reverse	х		NoF1-078	75965	76186	222	reverse	х	NoF1-078	76649	76870	222	reverse
ssDNA-binding phosphoprotein (Cop-I3L)	NoF1-079	MVA-HANP-068	х	NoF1-079	76187	76996	810	reverse	х		NoF1-079	76187	76996	810	reverse	х	NoF1-079	76871	77680	810	reverse
Ribonucleotide reductase large subunit (Cop-I4L)	NoF1-080	MVA-HANP-069	х	NoF1-080	77079	79394	2316	reverse	х		NoF1-080	77079	79394	2316	reverse	х	NoF1-080	77763	80078	2316	reverse
IMV protein VP13 (Cop-I5L)	NoF1-081	MVA-HANP-070	х	NoF1-081	79421	79660	240	reverse	х		NoF1-081	79421	79660	240	reverse	х	NoF1-081	80105	80344	240	reverse
Telomere-binding protein (Cop-I6L)	NoF1-082	MVA-HANP-071	х	NoF1-082	79679	80827	1149	reverse	х		NoF1-082	79679	80827	1149	reverse	х	NoF1-082	80363	81511	1149	reverse
Virion core cysteine protease (Cop-17L)	NoF1-083	MVA-HANP-072	х	NoF1-083	80820	82091	1272	reverse	х		NoF1-083	80820	82091	1272	reverse	х	NoF1-083	81504	82775	1272	reverse
RNA helicase, DExH-NPH-II domain (Cop-I8R)	NoF1-084	MVA-HANP-073	x	NoF1-084	82097	84127	2031	forward	х		NoF1-084	82097	84127	2031	forward	х	NoF1-084	82781	84811	2031	forward
Metalloprotease (Cop-G1L)	NoF1-085	MVA-HANP-074	x	NoF1-085	84131	85906	1776	reverse	х		NoF1-085	84131	85906	1776	reverse	х	NoF1-085	84815	86590	1776	reverse
Entryfusion complex component (Con-G3L)	NoF1-086	MVA-HANP-075	x	NoF1-086	85903	86238	336	reverse	×		NoF1-086	85903	86238	336	reverse	x	NoF1-086	86587	86922	336	reverse
VI TE (late transcription elongation factor) (Con-G2R)	NoF1-087	MVA-HANP-076	x	NoF1-087	86732	86894	663	forward	×		NoF1-087	86232	86894	663	forward	x	NoF1-087	86916	87578	663	forward
Glutaredovin-like protein (Con-GAL)	NoF1-088	MVA-HANP-077	x	NoF1-088	86864	87739	375	reverse	v		NoF1-088	86864	87738	375	reverse	v	NoF1-088	87548	87072	375	reverse
EEN1 like myleses (Con GSP)	NoE1 080	MVA HAND 079	~	NoE1 090	00004	00230	1209	forward	<u></u>		NoF1 080	00004	07230	1209	forward	~	NoF1 090	07075	000022	1209	forward
DNA nelemente suburit (BDO7) (Con C5 5D)	NoF1 000	MVA HAND 070	*	N=51.000	0/241	00340	100	forward			NoF1-085	0/241	00340	1300	forward		NoF1-085	0/323	05232	100	forward
KINA polyitetase subulit (KPO7) (Cop-03.5K)	NOF1-090	MVA-HANF-0/9	X	N0F1-090	00008	88/4/	192	Torward	x		NOF1-090	000086	88/4/	192	Torward	X	NOF1-090	89240	89431	192	Torward
NLPC/PO0 superiamuy protein (Cop-Gok)	NoF1-091	MVA-HANP-080	x	N0F1-091	88/49	89246	498	torward	X		N0F1-091	88749	89246	498	forward	X	N0F1-091	89433	89930	498	torward
Virion phosphoprotein, early morphogenesis (Cop-G/L)	NoF1-092	MVA-HANP-081	х	N0F1-092	89211	90326	1116	reverse	х		NoF1-092	89211	90326	1116	reverse	х	NoF1-092	89895	91010	1116	reverse
CC_Cop-G ORF B	overlap	-																			
VLTF-1 (late transcription factor 1) (Cop-G8R)	NoF1-093	MVA-HANP-082	х	NoF1-093	90357	91139	783	forward	х		NoF1-093	90357	91139	783	forward	х	NoF1-093	91041	91823	783	forward
Entry/fusion complex component, myristylprotein (Cop-G9R)	NoF1-094	MVA-HANP-083	х	NoF1-094	91159	92181	1023	forward	х		NoF1-094	91159	92181	1023	forward	х	NoF1-094	91843	92865	1023	forward
IMV membrane protein (Cop-L1R)	NoF1-095	MVA-HANP-084	х	NoF1-095	92182	92934	753	forward	х		NoF1-095	92182	92934	753	forward	х	NoF1-095	92866	93618	753	forward
Viral membrane assembly proteins (VMAP) (Cop-L2R)	NoF1-096	MVA-HANP-085	x	NoF1-096	92966	93232	267	forward	х		NoF1-096	92966	93232	267	forward	х	NoF1-096	93650	93916	267	forward
Internal virion protein (Cop-L3L)	NoF1-097	MVA-HANP-086	х	NoF1-097	93222	94274	1053	reverse	х		NoF1-097	93222	94274	1053	reverse	х	NoF1-097	93906	94958	1053	reverse
ss/dsDNA binding protein (VP8) (Cop-L4R)	NoF1-098	MVA-HANP-087	х	NoF1-098	94299	95054	756	forward	х		NoF1-098	94299	95054	756	forward	х	NoF1-098	94983	95738	756	forward
Entry and Fusion IMV protein (Cop-L5R)	NoF1-099	MVA-HANP-088	х	NoF1-099	95064	95450	387	forward		х	VVA-HANP-08	95064	95450	387	forward	х	NoF1-099	95748	96134	387	forward
Virion morph (Cop-J1R)	NoF1-100	MVA-HANP-089	х	NoF1-100	95407	95868	462	forward		х	VVA-HANP-08	95407	95868	462	forward	х	NoF1-100	96091	96552	462	forward
Thymidine kinase (Cop-J2R)	NoF1-101	MVA-HANP-090	x	NoF1-101	95884	96417	534	forward	х		NoF1-101	95884	96417	534	forward	х	NoF1-101	96568	97101	534	forward
Poly (A) polymerase small subunit (VP39) (Cop-J3R)	NoF1-102	MVA-HANP-091	x	NoF1-107	96485	97486	1002	forward	x	1	NoF1-107	96485	97486	1002	forward	x	NoF1-102	97169	98170	1002	forward
RNA polymerase subunit (RPO22) (Cop-J4R)	NoF1-103	MVA-HANP-092	x	NoF1-103	97401	97958	558	forward	×		NoE1-103	97401	97958	558	forward	x	NoE1-103	98085	98642	558	forward
IMV membrane protein (Con-ISL)	NoF1-104	MVA-HANP-002	r r	NoF1-104	98010	98/20	402	reverse	~		NoF1-104	98010	98/120	402	reverse	v	NoE1-104	98202	99104	402	reverse
PNA polymerase subunit (RPO1/7) (Con 16D)	NoE1 105	MVA-HAND 004	×	NoE1 105	085.72	102207	902	forward	~		NoE1 105	09517	102307	902	forward	×	NoF1-104	00111	102071	3921	forward
Turkar polymenase subulint (Kt O147) (Cop-JUK)	NoE1 102	MVA LIAND 007	×	Nor1 100	102204	102000	5001	roward			NoF1 105	102204	102307	5001	roward		NUT1-105	102000	102592	5001	rowaru
ryijoei pitospiatase, iriv-gannia minonoi (Cop-rite)	NOF1-100	MUA HAND COS	X	NUF1-106	102364	102899	510	reverse	x		NOF1-100	102304	102899	010	reverse	X	NOP1-106	103008	103202	010	reverse
INIV memorane protein (Cop-H2R)	NoF1-10/	MVA-HANP-096	x	NoF1-107	102913	103482	5/0	torward	х		NoF1-107	102913	103482	5/0	torward	X	NoF1-107	103597	104166	5/0	forward
INIV neparin binding surface protein (Cop-H3L)	NoF1-108	MVA-HANP-097	X	N0F1-108	103485	104462	9/8	reverse	х	1	NOF1-108	103485	104462	9/8	reverse	х	NoF1-108	104169	105146	9/8	reverse

			1		1	r	r		r								r						
RAP94 (RNA pol assoc protein) (Cop-H4L)	NoF1-109	MVA-HANP-098	х		NoF1-109	104463	106850	2388	reverse	х		NoF1-109	104463	106850	2388	reverse	х	N	IoF1-109	105147	107534	2388	reverse
VI TE-4 (late transcription factor 4) (Con-H5R)	NoF1-110	MVA-HANP-099	x		NoE1-110	107036	107656	621	forward	×		NoE1-110	107036	107656	621	forward	×	N	IoE1-110	107720	108340	621	forward
DNA	N F1 111	MUA HAND 100	A		11011110	107050	107050	011	1011010	~		1407 1 110	107050	107050	045	( I	~		54.444	107720	100340	045	for ward
DNA topoisomerase type I (Cop-HoK)	N0F1-111	MVA-HANP-100	х		N0F1-111	10/65/	108601	945	torward	x		N0F1-111	10/65/	108601	945	forward	x	N	1011-111	108341	109285	945	forward
CPV-B-116	overlap	-																					
Viral membrane assembly proteins (VMAP) (Con-H7R)	NoF1-112	MVA-HANP-101	x		NoF1-112	108639	109079	441	forward	×		NoE1-112	108639	109079	441	forward	×	N	IoF1-112	109323	109763	441	forward
mPNA	N-E1 112	MVA HAND 102			MALIAND 102	100122	111(57	2525	ferrund			N=51 112	100133	111057	2525	fammand			LIAND 10	100007	112241	2525	famurand
Inikiwa capping enzyme ange subunit (Cop-Dirk)	NOP1-113	WWWA-HAINF-102			INIVA-HAINF-102	109125	111057	2000	TUTWatu	~		NUF 1=115	105125	11105/	2333	TUTWatu		X VIVA	N-HAINF-10	105007	112341	2333	TOTWaru
Virion core (Cop-D2L)	NoF1-114	MVA-HANP-103		x	MVA-HANP-103	111616	112056	441	reverse		x	MVA-HANP-10	111616	112056	441	reverse		X MVA	A-HANP-10	112300	112740	441	reverse
Virion core (Cop-D3R)	NoF1-115	MVA-HANP-104		х	MVA-HANP-104	112049	112750	702	forward		х	MVA-HANP-10	112049	112750	702	forward		x MVA	A-HANP-10	112733	113434	702	forward
Uracil-DNA glycosylase, DNA polymerase processi vity factor (Con-D4R)	NoF1-116	MVA-HANP-105		×	MVA-HANP-105	112750	113406	657	forward		×	MVA-HANP-10	112750	113406	657	forward		x MVA	-HANP-10	113434	114090	657	forward
NTTD DNA : (C DCD)	N. E1 117	MUA HAND 107				440400	445705	2250	6				440400	445705	2050					444400	446470	2250	
N IPase, DNA primase (Cop-D5R)	N0F1-11/	MVA-HANP-106		X	MVA-HANP-106	115458	115/95	2358	torward		x	MVA-HANP-10	113438	115/95	2358	forward		X VIVA	A-HANP-10	114122	1164/9	2358	forward
M I VETE ( I C I C I D C DCD)																							
Morphogenesis, VEIF-s (early transcription fact or small) (Cop-Dok)	NoF1-118	MVA-HANP-107		×	MVA-HANP-107	115836	117749	1914	forward		×	MVA-HANP-10	115836	117749	1914	forward		x MVA	-HANP-10	116520	118433	1914	forward
PNA 1 1 1 (BPO 10) (C D7D)	N. F1 110	MUA HAND 100				4477776	4400064	400	6				4477776	4400.04	405					440460	440045	405	
RNA polymerase subunit (RPO18) (Cop-D/R)	NoF1-119	MVA-HANP-108		х	MVA-HANP-108	117776	118261	486	forward		х	MVA-HANP-10	117776	118261	486	forward		X MVA	A-HANP-10	118460	118945	486	forward
Carbonia anhydraca, GAG, birding IMV mambrana protain (Con, D81)																							
Carbonic annyurase, OAO-binding nvi v membrane protein (Cop-DoL)	NoF1-120	MVA-HANP-109		x	MVA-HANP-109	118224	119138	915	reverse		х	MVA-HANP-10	118224	119138	915	reverse		x MVA	-HANP-10	118908	119822	915	reverse
mPNA decapping enzyme (Con-D0P)	NoE1-121	MVA-HANP-110		v	MVA-HAND-110	110190	110921	642	forward		×	M/A-HAND-11	110190	110921	642	forward		× 40/A	-HAND-110	110964	120505	642	forward
DNA 1 (C DIOD)	N E1 122	MUA-HAND 111		^	NIVA-HAND 444	110100	115021	042	forward		^		110100	115021	342	forward		A 110/		110004	120303	342	forward .
mkiNA decapping enzyme (Cop-D10K)	N0F1-122	MVA-HANP-111		x	MVA-HANP-111	119818	120564	/4/	torward		x	MVA-HANP-11	119818	120564	/4/	forward		X VIVA	A-HANP-11	120502	121248	/4/	forward
ATPase, NPH1 (Cop-D11L)	NoF1-123	MVA-HANP-112		х	MVA-HANP-112	120565	122460	1896	reverse		х	MVA-HANP-11	120565	122460	1896	reverse		x MVA	A-HANP-11	121249	123144	1896	reverse
mRNA capping enzyme small subunit (Cop-D12L)	NoF1-124	MVA-HANP-113		х	MVA-HANP-113	122495	123358	864	reverse		х	MVA-HANP-11	122495	123358	864	reverse		x MVA	-HANP-11	123179	124042	864	reverse
WV Ten unknown 16																							
vv_laiFulkowiF10	overap																						
Trimeric virion coat protein (rifampicin res) (Cop-D13L)	NoF1-125	MVA-HANP-114		х	MVA-HANP-114	123389	125044	1656	reverse	х		NoF1-125	123389	125044	1656	reverse		x MVA	A-HANP-11	124073	125728	1656	reverse
VLTF-2 (late transcription factor 2) (Cop-A1L)	NoF1-126	MVA-HANP-115		х	MVA-HANP-115	125068	125520	453	reverse	х		NoF1-126	125068	125520	453	reverse	I –	x MVA	-HANP-11	125752	126204	453	reverse
VLTE-3 (late transcription factor 3) (Con-A2L)	NoF1-127	MVA-HANP-116		v	MVA-HANP-116	125541	126215	675	reverse	у		NoF1-127	125541	126215	675	reverse		x 1/1/1	-HANP-11	126225	126899	675	reverse
C C hand formation and many metric (C 12 ft)	N_E1 100	MUA HAND 117		^	A0/A 11410 4/2	120041	120213	075	reverse			NoT 1-127	120041	120213	075	reverse			114412 4	120000	107400	224	TEVEISE
5-5 DOINT IOTHAUON PATIWAY PROTEIN (COP-A2.5L)	N0F1-128	MVA-HANP-11/		х	WVA-HANP-117	126212	126442	251	reverse	х		N0F1-128	126212	126445	254	reverse		X MVA	A-mANP-11	126896	12/12b	251	reverse
P4b precursor (Cop-A3L)	NoF1-129	MVA-HANP-118	х		NoF1-129	126457	128391	1935	reverse	х		NoF1-129	126460	128394	1935	reverse		x MVA	-HANP-11	127141	129075	1935	reverse
39kDa virion core protein (Con-A4L)	NoF1-130	MVA-HANP-119	x		NoF1-130	128444	129325	882	reverse	×		NoF1-130	128447	129328	882	reverse	×	N	IoF1-130	129128	130009	882	reverse
DNA	N-E1 121	MVA HAND 120			N=F1 101	120202	120057	405	ferrurad			N=51 121	120200	120000	405	famment			- 51 421	120047	120541	405	famurant
KNA polymerase subum (RF019) (Cop-A3R)	N0F1-151	MVA-HANP-120	x		NOF1-151	129505	129857	495	Torward	x		NOF1-151	129300	129800	495	Torward	x	IN	IOF1-131	130047	130341	495	Torward
Vielander (Car A(I)																							
viral memorane assenioly proteins (viviAr), core protein (Cop-AoL)	NoF1-132	MVA-HANP-121	x		NoF1-132	129854	130972	1119	reverse	x		NoF1-132	129857	130975	1119	reverse	×	N	IoF1-132	130538	131656	1119	reverse
VETE L (aarly transgription factor large) (Con. A7L)	NoE1 122	MVA HAND 122	×		NoE1 122	120006	122120	2122	roworco			NoE1 122	120000	122121	2122	rovorco		N	InE1 122	121690	122012	2122	rovorco
VEIT-E (early traiscription ratio raige) (Cop- A/E)	NOP1=133	WWWA-HAINF-122			INUF1*135	130390	133120	2155	leverse			INUF 1=155	130555	155151	2135	leverse		IN	IUF1-135	151060	133012	2135	leverse
VITF-3 34kda subunit (Cop-A8R)	NoF1-134	MVA-HANP-123	х		NoF1-134	133182	134048	867	forward	х		NoF1-134	133185	134051	867	forward	х	N	IoF1-134	133866	134732	867	forward
Viral membrane associated, early morphogenesis protein (Cop-A9L)	NoF1-135	MVA-HANP-124	x		NoF1-135	134041	134388	348	reverse	x		NoF1-135	134044	134391	348	reverse	x	N	IoF1-135	134725	135072	348	reverse
P4a precursor (Con-A10L)	NoE1-136	MVA-HANP-125	×		NoE1-126	12/280	127070	2692	reverse	v		NoE1-126	12/202	127072	2682	reverse	×	N	IoE1-126	125072	127754	2682	reverse
The processor (cop-reform)	NOT 1-150	MUA-IDARI - 125	^		14011-150	134305	15/0/0	2002	Teverse	^		1401 1-150	134332	15/0/5	2002	Teverse	^	14	1011-150	135075	13/7.54	2002	leverse
Viral membrane assembly proteins (VMAP) (Cop-A1 1R)	NoF1-137	MVA-HANP-126	х		NoF1-137	137085	138041	957	forward	х		NoF1-137	137088	138044	957	forward		X MVA	A-HANP-12	137769	138725	957	forward
Virion core and cleavage processing protein (Cop-A12L)	NoF1-138	MVA-HANP-127	х		NoF1-138	138043	138621	579	reverse	х		NoF1-138	138046	138624	579	reverse	х	N	IoF1-138	138727	139305	579	reverse
IMV membrane protein, virion maturation (Con-A13L)	NoF1-139	MVA-HANP-128	x		NoF1-139	138645	138857	213	reverse	×		NoF1-139	138648	138860	213	reverse	×	N	IoF1-139	139329	139541	213	reverse
Eccential IMV membrane protein (Con_A14L)	NoE1 140	MVA HAND 120	×		NoE1 140	120065	120227	272	roworco			NoE1 140	120060	120240	272	rovorco		N	IoE1 140	120640	120021	272	rovorco
Essential INI V memorale protein (Cop-A14L)	1401-1-140	WWWA-HAINF-127			NOF1=140	130903	139237	2/5	reverse	~		NUF 1*140	130500	139240	2/3	leverse		IN IN	IOF1-140	135045	135521	2/3	leverse
Non-essential IMV membrane protein (Cop-A14.5L)	NoF1-141	MVA-HANP-130	х		NoF1-141	139254	139415	162	reverse	х		NoF1-141	139257	139418	162	reverse	х	N	IoF1-141	139938	140099	162	reverse
Core protein (Cop-A15L)	NoF1-142	MVA-HANP-131	x		NoF1-142	139405	139689	285	reverse	x		NoF1-142	139408	139692	285	reverse	x	N	IoF1-142	140089	140373	285	reverse
Munistrulated protein essential for entrulfusion (Cop. A16L)	NoE1-143	MVA-HANP-132	×		NoE1-1/2	120672	1/0906	1124	reverse	~		NoE1-1/2	120676	1/0900	1124	reverse	×	N	IoE1-143	140257	1/11/100	1124	reverse
Myrstylaed proteir, essential for entrylasion (Cop-A10E)	Nor 1-145	MULTINE 102	^		14011-145	133073	140000	1154	TEVEISE	^		1401 1-145	135070	140005	11.54	TEVEISE	^	14	1011-145	140337	141450	11.54	TEVEISE
IMV membrane protein (Cop-A1/L)	NoF1-144	MVA-HANP-133	х		NoF1-144	140809	141417	609	reverse	х		NoF1-144	140812	141420	609	reverse	х	N	IOF1-144	141493	142101	609	reverse
DNA helicase, transcript release factor (Cop-A18R)	NoF1-145	MVA-HANP-134	х		NoF1-145	141432	142913	1482	forward	х		NoF1-145	141435	142916	1482	forward	х	N	IoF1-145	142116	143597	1482	forward
Zinc finger-like protein (Con-A19L)	NoF1-146	MVA-HANP-135	x		NoF1-146	142894	143127	234	reverse	×		NoE1-146	142897	143130	234	reverse	×	N	IoF1-146	143578	143811	234	reverse
Late miger me protein (cop 11172)	11011110		~		11011 140	142034	145117	2.54	Tereise	<u>^</u>		110/ 1 110	142057	145150	2.54	Tereise	~		101 1 140	143370	145011	201	Teverse
IMV membrane protein entrylfision complex component (Con-A21L)																							
into memorane protein, enargiasion compara component (cop 11212)	NoF1-147	MVA-HANP-136	х		NoF1-147	143128	143481	354	reverse	х		NoF1-147	143131	143484	354	reverse	х	N	IoF1-147	143812	144165	354	reverse
DNA polymerase processivity factor (Con-A20R)	NoE1-148	MVA-HAND-137	×		NoE1-149	1/12/19/0	144760	1291	forward	×		NoE1-148	1/12/192	144762	1791	forward	×	N	IoE1-149	144164	145444	1291	forward
DIVA polynerase processivity factor (Cop-A20R)	Nor 1-140	MUA-ILALII - 157	^		14011-140	143400	144700	1201	Torward	^		1401 1-140	143403	144703	1201	Torward	^	14	011-140	144104	142444	1201	forward
Holliday junction resolvase (Cop-A22R)	NoF1-149	MVA-HANP-158	х		NoF1-149	144690	145253	564	forward	х		NoF1-149	144693	145256	564	forward	х	N	IOF1-149	145374	145937	564	forward
VITF-3 45kda subunit (Cop-A23R)	NoF1-150	MVA-HANP-139	х		NoF1-150	145273	146421	1149	forward	х		NoF1-150	145276	146424	1149	forward	х	N	loF1-150	145957	147105	1149	forward
RNA polymerase subunit (RPO132) (Cop-A24R)	NoF1-151	MVA-HANP-140	х		NoF1-151	146418	149912	3495	forward	х		NoF1-151	146421	149915	3495	forward	х	N	IoF1-151	147102	150596	3495	forward
A time inducion protain (Con. A251.)	N. E1 160	MULTIAND 1 f	1			440045	45044	225					4 40000	450000	0777		1	L		450004	450700	400	
A-type inclusion protein (Cop-A25L)	NoF1-152	MVA-HANP-141		х	MVA-HANP-141	149917	150141	225	reverse	x		NoF1-152	149893	153669	3777	reverse		x MVA	A-HANP-14	150601	150798	198	reverse
Unknown (CPV-B-160)	overlap	-																					
P4c precursor (Cop. A26I.)	NoE1 152	MVA HAND 142 f			MUA HAND 142	150727	151410	60.2	roworco			NoE1 152	152715	155393	1560	roworco		v 10/A		151304	152076	60.2	rovorco
r +c precuisor (cop-H20E)	NOP1-155	NIV/A-11/ANT-142			INIVA-HAINF=142	130/2/	131415	055	reverse			NUF 1=135	135/13	133203	1305	leverse		X VIVA		131304	132070	093	leverse
IMV surface protein, fusion protein (Cop-A2/L)	NoF1-154	MVA-HANP-143	х		NoF1-154	151471	151803	333	reverse	х		NoF1-154	155335	155667	333	reverse		X MVA	A-HANP-14	152126	152458	333	reverse
IMV MP Virus entry (Cop-A28L)	NoF1-155	MVA-HANP-144	x		NoF1-155	151804	152244	441	reverse	×		NoF1-155	155668	156108	441	reverse		x MVA	-HANP-14	152459	152899	441	reverse
RNA polymerase subunit (RPO35) (Con-A29L)	NoF1-156	MVA-HANP-145	x		NoF1-156	152245	153162	918	reverse	×		NoE1-156	156109	157026	918	reverse		x MVA	-HANP-14	152900	153817	918	reverse
DAV anataia (Can. A201.)	N_E1 157	MUA HAND 144	^		No. 1-150	152125	153355	221	iciciae			N=51 457	150000	157040	221		1			152700	154012	224	1010130
INIV protein (Cop-ASUL)	N0F1-15/	MVA-HANP-140	x		N0F1-15/	153125	153355	231	reverse	x		N0F1-157	156989	15/219	231	reverse		X VIVA	A-HANP-14	153780	154013	234	reverse
Viral membrane assembly proteins (VMAP) (Cop-A30.5L)	NoF1-158	MVA-HANP-147	х		NoF1-158	153388	153516	129	reverse	х		NoF1-158	157252	157380	129	reverse		x MVA	A-HANP-14	154046	154174	129	reverse
Hypothetical protein (Cop-A31R)	NoF1-159	MVA-HANP-148	х		NoF1-159	153515	153928	414	forward	х		NoF1-159	157379	157792	414	forward		x MVA	-HANP-14	154173	154550	378	forward
ATPase[DNA nackaging protein (Con. A321)	NoF1-160	MVA_HAND_140	v		NoF1-160	152909	15/1707	810	reverse	Y		NoE1-160	157762	158571	810	reverse		Y 10/A	-HAND-1/4	154520	155220	810	reverse
ATT ase DIVA packaging protein (Cop-A32L)	101-1-100	WIV/A=11/AINT=14-7	^		NUF1-100	133030	134707	010	reverse	^		NOF 1º 100	13//02	1303/1	010	leverse		X VIVA	4"FIAINF"140	134320	133325	010	leverse
FEV membrane phosphoglycoprotein C-type lectin -like domain (Cop. A 33P)			1		1	1			1								1						
as a memorane prosprogycoprotein, c-type cent -inc dottkill (COPAD3R)	NoF1-161	MVA-HANP-150	х		NoF1-161	154825	155400	576	forward	х		NoF1-161	158689	159264	576	forward		x MVA	-HANP-15	155447	156004	558	forward
C-type lectin-like IEV/EEV glycoprotein (Con-A34R)	NoF1-162	MVA-HANP-151	x		NoF1-162	155424	155930	507	forward	x		NoF1-162	159288	159794	507	forward	1	x ////	-HANP-15	156028	156534	507	forward
W/C== A ODE M			^		1101 1-102	1.5.5424	100000		101.0010	^		1101 1-102	100200	100104	501		1	- "WA		100020	2.JUJJ4	501	
VV-COP-A OKF M	overiap	-						l	<u> </u>			l	I	-		<u> </u>	l	<b>├</b>					
MHC class II antigen presentation inhibitor (Cop-A35R)	NoF1-163	MVA-HANP-152	х		NoF1-163	155976	156506	531	forward	х		NoF1-163	159840	160370	531	forward		x MVA	A-HANP-15	156578	157108	531	forward
IEV transmembrane phosphoprotein (Cop-A36R)	NoF1-164	MVA-HANP-153	х		NoF1-164	156570	157238	669	forward	х		NoF1-164	160434	161102	669	forward		x MVA	-HANP-15	157175	157801	627	forward
Hypothetical protein (Con. A37P)	NoF1-165	MVA-HAND-154	 v	1	NoE1-165	15720F	159006	702	forward	v		NoE1-165	161160	161060	702	forward	1	v 6./A	HAND-1C	157965	159656	702	forward
Hyponician procent (COP-7637K)	NOL1-100	m v A-11ANT-134			INOLT-102	200100	130030	/52	TUTWAID	^		NUL1-102	101109	101200	/32	Torward		× VIVA	CT-UNINE-12	10/002	100000	132	TOTWAID
Unknown (Gar-A43R)	NoF1-166	-	Х		NoF1-166	158204	158389	186	torward	х		NoF1-166	162068	162253	186	torward		<b>└──</b>					
CD47-like, integral membrane protein (Cop-A38L)	NoF1-167	MVA-HANP-155	x		NoF1-167	158386	159219	834	reverse	х		NoF1-167	162250	163083	834	reverse	1	x MVA	-HANP-15	158916	159749	834	reverse

													-										
Semanhorin (Con. A39R)	NoF1-168	MVA-HANP-156 f	x		NoF1-168	159235	160446	1212	forward	x		NoF1-168	163099	164310	1212	forward		x	WVA-HANP-15	159766	160017	252	forward
		MVA-HANP-157 f																х	//VA-HANP-15	160323	160955	633	forward
Lectin homolog (Cop-A40R)	NoF1-169	MVA-HANP-158	х		NoF1-169	160468	160950	483	forward	х		NoF1-169	164332	164814	483	forward		х	VVA-HANP-15	160977	161483	507	forward
Chemokine binding protein (Cop-A41L)	NoF1-170	MVA-HANP-159	х		NoF1-170	161048	161710	663	reverse	х		NoF1-170	164912	165574	663	reverse		х	//VA-HANP-15	161522	162181	660	reverse
Profilin-like protein, ATI-localized (Cop-A42R)	NoF1-171	MVA-HANP-160	х		NoF1-171	161889	162290	402	forward	х		NoF1-171	165753	166154	402	forward		х	//VA-HANP-16	162353	162739	387	forward
Type I membrane glycoprotein (Cop-A43R)	NoF1-172	MVA-HANP-161	х		NoF1-172	162328	162909	582	forward	х		NoF1-172	166192	166773	582	forward	х		NoF1-172	162777	163358	582	forward
Hypothetical protein (Cop-A43.5R)	NoF1-173	MVA-HANP-162	х		NoF1-173	162912	163157	246	forward	х		NoF1-173	166776	167021	246	forward	х		NoF1-173	163361	163606	246	forward
3 beta-hydroxysteroid dehydrogenase delta 5->4 isomerase (Cop-A44L)	NoF1-174	MVA-HANP-163		x	MVA-HANP-163	163249	164289	1041	reverse	x		NoF1-174	167113	168153	1041	reverse	×		NoF1-174	163698	164738	1041	reverse
Inactive Cu-Zn superoxide dismutase-like virion protein (Cop-A45R)	NoF1-175	MVA-HANP-164		x	MVA-HANP-164	164336	164701	366	forward	x		NoF1-175	168200	168577	378	forward	×		NoF1-175	164785	165162	378	forward
IL-1 TLR signaling inhibitor (Cop-A46R)	NoF1-176	MVA-HANP-165		х	MVA-HANP-165	164691	165413	723	forward	х		NoF1-176	168567	169289	723	forward	х		NoF1-176	165152	165874	723	forward
Immunoprevalent protein (Cop-A47L)	NoF1-177	MVA-HANP-166		х	MVA-HANP-166	165461	166177	717	reverse	х		NoF1-177	169425	170159	735	reverse	х		NoF1-177	166010	166744	735	reverse
Thymidylate kinase (Cop-A48R)	NoF1-178	MVA-HANP-167		х	MVA-HANP-167	166276	166890	615	forward	х		NoF1-178	170032	170874	843	forward	х		NoF1-178	166617	167459	843	forward
Putative phosphotransferase anion transport pro tein (Cop-A49R)	NoF1-179	MVA-HANP-168		x	MVA-HANP-168	166914	167402	489	forward	x		NoF1-179	170923	171411	489	forward	x		NoF1-179	167508	167996	489	forward
ATP-dependent DNA ligase (Cop-A50R)	NoF1-180	MVA-HANP-169		х	MVA-HANP-169	167434	169092	1659	forward	х		NoF1-180	171444	173108	1665	forward	х		NoF1-180	168029	169693	1665	forward
Hypothetical protein (Cop-A51R)	NoF1-181	MVA-HANP-170		x	MVA-HANP-170	169138	170283	1146	forward		x	VVA-HANP-17	173154	174299	1146	forward	х		NoF1-181	169746	170750	1005	forward
TollIL-1 receptor-like protein, IL-1, NFkB signalling inhibitor (Cop-A52R)	NoF1-182	-															x		NoF1-182	170819	171391	573	forward
TNF receptor (CrmC) (Cop-A53R)	-	-																					
CPV-B-192	NoF1-183	-															х		NoF1-183	172155	172325	171	forward
BTB Kelch-domain containing protein; CRL complex (Cop-A55R)	NoF1-184																x		NoF1-184	172529	174220	1692	forward
Hemagglutinin (Cop-A56R)	NoF1-185	MVA-HANP-171		х	MVA-HANP-171	173605	174552	948	forward		х	VVA-HANP-17	177621	178568	948	forward	х		NoF1-185	174272	175186	915	forward
Guanylate kinase (Cop-A56.5R)	NoF1-186	MVA-HANP-172 f		×	MVA-HANP-172	174848	175141	294	forward	×		NoF1-186	178586	178699	114	forward	×		NoF1-186	175203	175796	594	forward
SerThr Kinase (Con-B1R)	NoF1-187	MVA-HANP-173		×	MVA-HANP-173	175292	176194	903	forward	×		NoF1-187	179318	180217	900	forward	×		NoF1-187	175946	176845	900	forward
		MVA-HANP-174 f		v	MVA-HAND-174	176222	176623	201	forward	~		NoE1-199	190797	191904	1518	forward	v		NoE1-199	176015	179/32	1518	forward
Schlafen (Con-B2R)	NoF1-188	MVA-HAND 176 f			WIVA-HANF-174	170333	170025	231	forwaru	^		INUF 1*100	100207	101004	1010	TOTWaru			NUF1-100	1/0913	1/0452	1310	TOTWaru
benauen (cop b2xc)	1101 1 100	MVA-HANP-1/5		X	MVA-HANP-1/5	1/64/8	176909	432	forward														<u> </u>
		MVA-HANP-1/0		x	MVA-HANP-1/6	1//106	177645	540	torward										-				H
Ankyrin (Cop-B4R)	NoF1-189	MVA-HANP-177 <sup>f</sup>		x	MVA-HANP-177 MVA-HANP-178	177872	178405	534	forward forward	x		NoF1-189	182068	183753	1686	forward	x		NoF1-189	178696	180381	1686	forward
FEV type=1 membrane elycoprotein protective an tigen (Con=BSR)	NoF1-190	MVA-HANP-179		×	MVA-HANP-179	179613	180566	954	forward	v		NoE1-190	183857	184810	954	forward	×		NoF1-190	180485	181438	954	forward
Ankvrin-like protein (Con-B6R)	NoF1-191	MVA-HANP-180		x	MVA-HANP-180	180663	181184	522	forward	x		NoF1-191	184909	185208	300	forward	x		NoF1-191	181537	181836	300	forward
Virulence. ER resident (Cop-B7R)	NoF1-192	MVA-HANP-181		x	MVA-HANP-181	181222	181755	534	forward	x		NoF1-192	185482	186027	546	forward	x		NoF1-192	182110	182655	546	forward
Soluble IEN-g recentor-like protein (Con-B8R)	NoF1-193	MVA-HANP-182 f		×	MVA-HAND-197	191910	182/00	681	forward	v		NoE1-192	186070	186870	801	forward	×		NoE1-193	182707	183507	801	forward
EP localized aportosis regulator (Con BOR)	NoF1 104	MVA HAND 192		~	MVA HAND 192	101010	102450	210	forward	~		NoE1 104	196000	1000/5	720	forward	~		NoF1-193	102/0/	103307	720	forward
Kaleh lika protein (Con P10P)	NoF1 105	MVA HAND 184		~	MVA HAND 184	102047	102003	477	forward	~		NoE1 105	100500	10/05/	1505	forward	~		NoF1-194	103320	104203	1505	forward
Hypothetical protein (Cop-B10R)	NoF1-196	MVA-HANP-185		Ŷ	MVA-HAND-185	192326	182600	225	forward	Ŷ		NoE1-195	190271	180505	225	forward	Ŷ		NoE1-195	185000	186773	225	forward
SerThr Kinsse (Con-B12R)	NoF1-197	MVA-HANP-186		Ŷ	MVA-HAND-186	182667	18/518	852	forward	Ŷ		NoE1-107	189667	100525	864	forward	Ŷ		NoE1-197	186200	197152	864	forward
Serfine Relase (Cop-D12R)	1101 1-177	MUA HAND 107 f		Â	NIVA-HAND 407	103007	104010	0.02	forward (	^		14011-137	100002	150525	4025	forward (	^		14011-157	1002.00	10/100	4007	forward (
Serpin 1,2,3 (Cop-K2L)	NoF1-198	MVA-HANP-187 MVA-HANP-188		x	MVA-HANP-187 MVA-HANP-188	184626	184976	669	forward	x		NOF1-198	190622	191656	1035	torward	x		N0F1-198	187250	188284	1035	forward
Hypothetical protein (Cop-C16L)	NoF1-199	MVA-HANP-189		х	MVA-HANP-189	185695	186126	432	forward	х		NoF1-199	191787	192236	450	forward	х		NoF1-199	188415	188864	450	forward
IL-1 beta receptor (Cop-B16R)	NoF1-200	MVA-HANP-190		х	MVA-HANP-190	186210	187190	981	forward	х		NoF1-200	192320	193297	978	forward	х		NoF1-200	188948	189925	978	forward
IL-1 beta inhibitor (Cop-B17L)	NoF1-201	MVA-HANP-191		х	MVA-HANP-191	187236	188258	1023	reverse	х		NoF1-201	193345	194367	1023	reverse	х		NoF1-201	189973	190995	1023	reverse
Ankyrin (Cop-B18R)	NoF1-202	MVA-HANP-192		х	MVA-HANP-192	188398	190122	1725	forward	х		NoF1-202	194509	196233	1725	forward	х	-	NoF1-202	191137	192861	1725	forward
IFN-alpha beta receptor glycoprotein (Cop-B19R)	NoF1-203	MVA-HANP-193 f		х	MVA-HANP-193	190188	190892	705	forward	х		NoF1-203	196252	197349	1098	forward	х		NoF1-203	192880	193977	1098	forward
Ankyrin (Cop-B20R)	NoF1-204	-								х		NoF1-204	197410	199767	2358	forward	x		NoF1-204	194038	196395	2358	forward
CPV-B-214	overlap	-																					
kelch-like protein (EVM-167)	NoF1-205	-								х		NoF1-205	199870	201543	1674	forward	х		NoF1-205	196498	198171	1674	forward
Hypothetical protein (Cop-C11.5R)	-	-																					
Serpin 1,2,3 (Cop-K2L)	NoF1-206	-								х		NoF1-206	201723	202832	1110	forward	х		NoF1-206	198351	199460	1110	forward
Hypothetical protein (Cop-C14L)	NoF1-207	-								х		NoF1-207	203009	203590	582	forward	х		NoF1-207	199637	200218	582	forward
Surface glycoprotein	NoF1-208	MVA-HANP-194 f		х	MVA-HANP-194	191391	191603	213	forward	х		NoF1-208	203836	209601	5766	forward	х		NoF1-208	200464	206229	5766	forward
Ankyrin (Cop-C19L)	NoF1-209	-								x		NoF1-209	209818	211623	1806	forward	x		NoF1-209	206446	208251	1806	forward
TNF receptor (CrmD)	NoF1-210	-	L		-		L			х		NoF1-210	211630	212598	969	forward	х	I	NoF1-210	208258	209226	969	forward
Hypothetical protein (Cop-C16L)	NoF1-211	MVA-HANP-195		х	MVA-HANP-195	192086	192652	567	forward	х		NoF1-211	213272	213733	462	forward	х	1	NoF1-211	209900	210361	462	forward
Ankyrin (Cop-C17L)	NoF1-212	MVA-HANP-196 f MVA-HANP-197 f	x		NoF1-212	192869	194875	2007	forward	x		NoF1-212	213948	215954	2007	forward	x		NoF1-212	210578	212584	2007	forward
Ankvrin-like repeat containing protein	NoF1-213	-	x		NoF1-213	194915	195004	90	forward	x		NoF1-213	215994	216083	90	forward	x	1	NoF1-213	212624	212713	90	forward
Ankwin (Con-C191)	NoE1 214	MVA-HAND 100 f			NoE1 314	105096	106953	1757	forward		1	NoE1 314	216165	217021	1757	forward		1	NoE1 314	212705	21/561	1767	forward
TNE recentor (CrmB) (Con-C221)	NoF1-214	M # // - 11/101 - 190	×		NoE1-214	195030	199002	1074	forward	×		NoE1-215	210103	21/551	1074	forward	×	1	NoE1-214	212/33	214301	1074	forward
Chamaking hinding protein (Con C22L)	N-FL 217	MUL HAND 100 f		-	1101 1-213	100035	100005	10/4	ionwaiu	^	-	1101 1-213	210005	21,002	10/4	rorwidiu	^	1	110/1-213	214037	213/12	10/4	(
Chemokake onking protein (Cop*C2.3L)	N0F1-210	www.a-HANP-199	X		N0F1-216	198077	198802	/2b	torward	x		NOF1-216	219156	219893	/58	rorward	х		NOF1-216	215/86	210523	/38	iorward
UF Y-D-UU2	NOP1-21/		1	1	1		1		1	х	1	NOF1-21/	219922	220149	228	torward	х	1	NOF1-217	210552	216//9	228	Torward

	CPXV-No-F1	MVA-HANP				R7							R8							R9			-
Function	CDS	CDS	CPXV-NoF1	MVA- HANP	CDS	Start	Stop	Length	Direction	CPXV- NoF1	MVA- HANP	CDS	Start	Stop	Length	Direction	CPXV- NoF1	MVA- HANP	os s	Start	Stop	Length	Direction
CPV-B-002	NoF1-001	-	x		NoF1-001	1302	1529	228	reverse	x		NoF1-001	1304	1531	228	reverse	x	NoF	L-001	814	1041	228	reverse
Chemokine binding protein (Cop-C23L)	NoF1-002	MVA-HANP-001 f		×	WVA-HANP-00	1752	2162	411	reverse	×		NoF1-002	1560	2297	738	reverse	x	NoF	1-002	1070	1807	738	reverse
CPV-B-004	overlap	-																					
TNF receptor (CrmB) (Cop-C22L)	NoF1-003	-								х		NoF1-003	2371	3444	1074	reverse	х	NoF	1-003	1881	2954	1074	reverse
Ankyrin (Cop-C19L)	NoF1-004	MVA-HANP-002 f		x	WVA-HANP-00	2594	3124	531	reverse	×		NoF1-004	3522	5288	1767	reverse	x	NoF	L-004	3032	4798	1767	reverse
Ankyrin-like repeat containing protein	NoF1-005	-								×		NoF1-005	5370	5459	90	reverse	х	NoF	L-005	4880	4969	90	reverse
Ankyrin (Cop-C17L)	NoF1-006	MVA-HANP-003 <sup>f</sup> MVA-HANP-004 <sup>f</sup> MVA-HANP-005 <sup>f</sup>	x		NoF1-006	3232	5076	1845	reverse	x		NoF1-006	5499	7505	2007	reverse	x	NoF	1-006	5009	7015	2007	reverse
Hypothetical protein (Cop-C16L)	NoF1-007	-	x		NoF1-007	5289	5750	462	reverse	x		NoF1-007	7720	8181	462	reverse	x	NoF	1-007	7234	7695	462	reverse
Alpha amanatin target protein (Cop-N2L)	NoF1-008	-	x		NoF1-008	5921	6574	654	reverse	х		NoF1-008	8352	9005	654	reverse	х	NoF	1-008	7866	8519	654	reverse
BTB Kelch-domain containing protein; CRL complex (Cop-A55R)	NOF1-009	-	х		NOF1-009	6887	7480	594	reverse	х		NOF1-009	9318	9911	594	reverse	х	NOF	1-009	8832	9425	594	reverse
Ankyrin (Cop-B20R)	NoF1-010	-	x		NoF1-010	7807	9822	2016	reverse	×		NoF1-010	10238	12253	2016	reverse	х	NoF	L-010	9752	11767	2016	reverse
C-type lectin domain containing protein	NoF1-011	-	x		NoF1-011	10049	10258	210	reverse	x		NoF1-011	12480	12689	210	reverse	x	NoF	L-011 :	11994	12203	210	reverse
BTB Kelch-domain containing protein; CRL complex (Cop-A55R)	NoF1-012	-	x		NoF1-012	10686	11297	612	reverse	x		NoF1-012	13117	13728	612	reverse	x	NoF	1-012	12631	13242	612	reverse
TNF receptor (CrmB) (Cop-C22L)	NoF1-013	-	x		NoF1-013	11372	11980	609	reverse	×		NoF1-013	13803	14411	609	reverse	x	NoF	1-013	13317	13925	609	reverse
INF-aipia receptor like protein	NoF1-014 NoF1_015	-	x		NoF1-014	11977	12309	333	reverse	X		NOF1-014	14408	14/40	333	reverse	x	NOF	L-014 1	13922	14254	333	reverse
Ankyrin (CDXV-017)	NoF1-015	-	×		NoF1-015	14963	16270	1308	reverse	×		NoF1-015	14615	1/110	1308	reverse	x	NOF	L-015 .	16908	18215	1308	reverse
MPV-Z-N3R	NoF1-017	-	×		NoF1-017	16369	16884	516	reverse	×		NoF1-010	18800	19315	516	reverse	×	NoF	1-017	18314	18829	516	reverse
Ankyrin (Cop-B18R)	NoF1-018	-	x		NoF1-018	16947	19568	2622	reverse	x		NoF1-018	19378	21993	2616	reverse	x	NoF	1-018	18892	21507	2616	reverse
Host range protein	NoF1-019	-	x		NoF1-019	19616	20134	519	reverse	x		NoF1-019	22041	22559	519	reverse	x	NoF	L-019	21555	22073	519	reverse
Secreted EGF-like protein (Cop-C11R)	NoF1-020	MVA-HANP-006	х		NoF1-020	20301	20726	426	forward	x		NoF1-020	22726	23151	426	forward	x	NoF	1-020	22240	22665	426	forward
IL-1 receptor antagonist (Cop-C10L)	NoF1-021	MVA-HANP-007	x		NoF1-021	20879	21874	996	reverse	х		NoF1-021	23304	24299	996	reverse	х	NoF	1-021	22818	23813	996	reverse
Zinc finger-like protein	NoF1-022	MVA-HANP-008 <sup>1</sup>	×		NoF1-022	22389	23117	729	forward	х		NoF1-022	24814	25542	729	forward	х	NoF	1-022	24328	25056	729	forward
Soluble IL-18 binding protein (Bsh-D7L)	NoF1-023	MVA-HANP-009	x		NoF1-023	23266	23646	381	reverse	x		NoF1-023	25691	26071	381	reverse	x	NoF	1-023	25205	25585	381	reverse
Aslandelli est Danas (Danas DOL)	N-EL 024	MVA-HANP-010 <sup>t</sup> MVA-HANP-011 <sup>f</sup>	×		NoF1-024	23705	25720	2016	reverse	×		NoF1-024	26130	28145	2016	reverse	x	NoF	1-024	25644	27659	2016	reverse
AnkynijHost Kange (Bang-D8L)	NOF1-024	MVA-HANP-012																					
		MVA-HANP-013	-																				
		MVA-HANP-014																					
ANK-containing protein	NoF1-025	MVA-HANP-015	x		NoF1-025	25834	26025	192	reverse	х		NoF1-025	28259	28450	192	reverse	х	NoF	1-025	27773	27964	192	reverse
		MVA-HANP-016	х		NoF1-026	26199	28103	1905	reverse	x		NoF1-026	28624	30528	1905	reverse	x	NoF	1-026	28138	30042	1905	reverse
Ankyrin; Type I IFN resistance (Cop-C9L)	NoF1-026	MVA-HANP-017 <sup>t</sup> MVA-HANP-018 <sup>f</sup>																					
Unknown (Cop-C8L)	NoF1-027	MVA-HANP-019	×		NoF1-027	28145	28702	558	reverse	x		NoF1-027	30570	31127	558	reverse	x	NoF	1-027	30084	30641	558	reverse
Type I IFN mnbitor (Cop-C/L) Pol 2 like protein IFN here inhibitor (Cop C/L)	NoF1-028 NoF1-020	MVA-HANP-020 MVA HAND 021	x		NoF1-028	28774	29226	453	reverse	X		NOF1-028	31199	31651	453	reverse	X	NOF	L-028 :	30/13	31165	453	reverse
Kelch-like protein (Cop-CSL)	overlap	MVA-HAINF-021	^		INOF 1=025	23437	23324	400	reverse	*		N0F1-029	51002	52549	400	Teverse	X	NUF	1=029 :	51590	21002	400	leverse
Kelch-like protein (Cop-C5L)	NoF1-030	-	×		NoF1-030	30257	30634	378	reverse	×		NoF1-030	32682	33059	378	reverse	×	NoF	1-030	32196	32573	378	reverse
IL-1 receptor antagonist (Cop-C10L)	NoF1-031	-	x		NoF1-031	30695	31642	948	reverse	x		NoF1-031	33120	34067	948	reverse	x	NoF	1-031	32634	33581	948	reverse
Complement binding (secreted) (Cop-C3L)	NoF1-032	-	x		NoF1-032	31709	32503	795	reverse	x		NoF1-032	34134	34928	795	reverse	x	NoF	1-032	33648	34442	795	reverse
POZ BTB Kelch domain protein (Cop-C2L)	NoF1-033	-	х		NoF1-033	32566	34104	1539	reverse	x		NoF1-033	34991	36529	1539	reverse	x	NoF	1-033	34505	36043	1539	reverse
Putative TLR signalling inhibitor (Cop-C1L)	NoF1-034	-	x		NoF1-034	34173	34811	639	reverse	x		NoF1-034	36598	37236	639	reverse	x	NoF	1-034	36112	36750	639	reverse
Anti-apoptotic Bcl-2-like protein (Cop-N1L)	NoF1-035	MVA-HANP-022 f	x		NoF1-035	34853	35206	354	reverse	x		NoF1-035	37278	37631	354	reverse	x	NoF	1-035	36792	37145	354	reverse
Alpha amanatin target protein (Cop-N2L) ANK-containing protein; apoptosis inihibitor (Cop-M1L)	NoF1-036	MVA-HANP-023	×		NoF1-036	35328	35858	531	reverse	×		NoF1-036	37753	38283	531	reverse	×	NoF	L-036	37267	37797	531	reverse
NEt/B inhibitor (Con. M21)	NoF1-03/ NoF1-029		×		NOF1-037	35901	3/316	1416	reverse	×		NOF1-037	38326	39/41	1416	reverse	x	NoF	1-03/	3/840	39255	1416	reverse
NFKB IIIIBIOF (COP-M2L)	NOF1-038	-	x		NOF1-038	37294	3/956	003	reverse	x		N0F1-038	39719	40381	003	reverse	x	NOF	L-U38 :	39233	39895	003	reverse
Ankymi NPKB initiator (Cop-K1L)	NoF1-039 NoF1-040	MVA-HANP-024 MVA HAND 025	x		NoF1-039	38080	38937	858	reverse	X		NOF1-039	40505	41362	858	reverse	X	NOF	L-039 4	40019	408/6	858	reverse
IEN rasistance DKP/aIE-alpha inhibitor (Con-K31)	NoF1-041	MVA-HANP-025	×		NoF1-040	39293	40410	267	reverse	×		NoF1-040	41/20	42041	267	reverse	×	NOF	1-040	42239	42555	3/	reverse
Phospholinase, D-like protein (Cop. K41)	NoF1-042	MVA-HANP-027	Ŷ		NoF1-042	40793	42067	1275	reverse	Ŷ		NoF1-042	42032	44492	1275	reverse	×	NoF	1-042	42732	44006	1275	reverse
Monoglyceride lipase (Cop-K5L/K6L)	NoF1-043	MVA-HANP-028 <sup>f</sup> MVA-HANP-029 <sup>f</sup>	x		NoF1-043	42095	42925	831	reverse	x		NoF1-043	44520	45350	831	reverse	x	NoF	1-043 4	44034	44864	831	reverse
Host immune response repressor (Cop-K7R)	NoF1-044	MVA-HANP-030	x		NoF1-044	43063	43512	450	forward	×		NoF1-044	45488	45937	450	forward	x	NoF	1-044	45002	45451	450	forward
CPV-B-047	overlap	-			1																-		
Caspase-9 (apoptosis) inhibitor (mitochondrial- associated) (Cop-F1L)	NoF1-045	MVA-HANP-031	x		NoF1-045	43586	44329	744	reverse	×		NoF1-045	46011	46754	744	reverse	x	NoF	L-045 4	45525	46268	744	reverse
dUTPase (Cop-F2L)	NoF1-046	MVA-HANP-032	x		NoF1-046	44329	44772	444	reverse	x		NoF1-046	46754	47197	444	reverse	x	NoF	1-046	46268	46711	444	reverse
Kelch-like protein (Cop-F3L)	NoF1-047	MVA-HANP-033	x		NoF1-047	44796	46238	1443	reverse	x		NoF1-047	47221	48663	1443	reverse	x	NoF	L-047 4	46735	48177	1443	reverse
Ribonucieonue reductase small subunit (Cop-F4L)	N0F1-048	MVA-HANP-034	×		NOF1-048	46249	4/250	1002	reverse	×		NOF1-048	486/4	49675	1002	reverse	x	NoF	L-U48 4	48188	49189	1002	reverse
36kDa major membrane protein (Cop-F5L)	NoF1-049	MVA-HANP-035 <sup>+</sup> MVA-HANP-036 <sup>+</sup>	×		NoF1-049	47240	48205	966	reverse	x		NoF1-049	49665	50630	966	reverse	x	NoF	L-U49 4	49179	50144	966	reverse
Hypothetical protein (Cop-F6L)	NoF1-050	MVA-HANP-037	x	I	NoF1-050	48235	48450	216	reverse	х		NoF1-050	50660	50875	216	reverse	х	NoF	1-050	50174	50389	216	reverse

Hypothetical protein (Con-F7L)	NoF1-051	MVA-HANP-038	×		NoE1-051	48466	48711	246	reverse	Y		NoE1-051	50891	51136	246	reverse	x	NoE1-051	50405	50650	246	reverse
Cytopkemic protein (Cop-F8L)	NoF1-052	MVA-HANP-030	~		NoE1-052	48868	49065	108	reverse	v		NoF1-052	51/37	51634	108	reverse	×	NoE1-052	500/3	511/0	102	reverse
Cytopasmac procan (Cop-10E)	11011-052	MUTURAL -057	^		1401 1-052	40000	45005	150	TEVEISE	^		1001 1-032	51457	51054	150	reverse	^	1401 1-032	50545	51140	150	Teverse
S-S bond formation pathway protein substrate (Cop-F9L)	N=E1.052	MVA HAND 040			N=51.052	40120	40764	c20				N=51.052	51005	52222	c20			N=51.052	F1201	F1030	c20	1
	N0F1-033	MVA-HANF-040	×		NUF1-055	49120	49/04	039	reverse	x		NOF1-053	51095	52555	039	reverse	x	NOF1-055	51201	21928	039	reverse
VV/ Con E ODE D	NOF1-034	WIVA-HAINF-041	x		NOF1-054	49751	210/0	1320	reverse	x		NOF1-054	52320	53039	1520	reverse	x	NOP1-054	51820	55145	1320	reverse
VV_COP-FORFD	overap	-																				
RhoA signalling inhibitor, virus release protei n (Con-F11L)		MVA-HANP-042	х		NoF1-055	51093	52157	1065	reverse	х		NoF1-055	53662	54726	1065	reverse	х	NoF1-055	53168	54232	1065	reverse
	NoF1-055	MVA-HANP-043 f																				
EEV maturation protein (Cop-F12L)	NoF1-056	MVA-HANP-044	х		NoF1-056	52200	54104	1905	reverse	х		NoF1-056	54769	56673	1905	reverse	x	NoF1-056	54275	56179	1905	reverse
Palmitylated EEV membrane glycoprotein (Cop-F13 L)	NoF1-057	MVA-HANP-045	х		NoF1-057	54138	55256	1119	reverse	х		NoF1-057	56707	57825	1119	reverse	х	NoF1-057	56213	57331	1119	reverse
Unknown (Cop-F14L)	NoF1-058	MVA-HANP-046	х		NoF1-058	55274	55495	222	reverse	х		NoF1-058	57843	58064	222	reverse	х	NoF1-058	57349	57570	222	reverse
IMV protein (Cop-F14.5L)	-	MVA-HANP-047																				
CPV-B-063	NoF1-059		х		NoF1-059	55542	55700	159	forward	х		NoF1-059	58111	58269	159	forward	x	NoF1-059	57617	57775	159	forward
Unknown conserved protein (Cop-F15L)	NoF1-060	MVA-HANP-048	х		NoF1-060	55768	56244	477	reverse	х		NoF1-060	58337	58813	477	reverse	x	NoF1-060	57843	58319	477	reverse
Non-functional Serine Recombinase (Cop-F16L)	NoF1-061	MVA-HANP-049	х		NoF1-061	56244	56945	702	reverse	х		NoF1-061	58813	59514	702	reverse	х	NoF1-061	58319	59020	702	reverse
DNA-binding phosphoprotein (VP11); mTOR antagonist (Cop-F17R)	NoF1-062	MVA-HANP-050	х		NoF1-062	57008	57313	306	forward	x		NoF1-062	59577	59882	306	forward	x	NoF1-062	59083	59388	306	forward
Poly (A) polymerase catalytic subunit (VP55) (Cop-E1L)	NoF1-063	MVA-HANP-051	х		NoF1-063	57310	58749	1440	reverse	х		NoF1-063	59879	61318	1440	reverse	x	NoF1-063	59385	60824	1440	reverse
IEV morphogenesis (Cop-E2L)	NoF1-064	MVA-HANP-052	х		NoF1-064	58746	60959	2214	reverse	x		NoF1-064	61315	63528	2214	reverse	x	NoF1-064	60821	63034	2214	reverse
dsRNA-binding protein, IFN resistance/PKR inhibitor (Z-DNA binding) (Cop-																						
E3L)	NoF1-065	MVA-HANP-053	x		NoF1-065	61090	61662	573	reverse	x		NoF1-065	63659	64231	573	reverse	x	NoF1-065	63165	63737	573	reverse
RNA polymerase subunit (RPO30) (Cop-E4L)	NoF1-066	MVA-HANP-054	×		NoF1-066	61717	62502	786	reverse	x		NoF1-066	64286	65071	786	reverse	x	NoF1-066	63792	64577	786	reverse
Virosome component (Con-ESR)	NoF1-067	MVA-HANP-055	×		NoF1-067	62622	63575	954	forward	×		NoE1-067	65191	66144	954	forward	x	NoE1-057	64697	65650	954	forward
Virion protein (Cop-E6R)	NoF1-068	MVA-HANP-056	v		NoF1-068	63695	65398	1704	forward	Ŷ		NoF1-068	66764	67967	1704	forward	x	NoF1-069	65770	67473	1704	forward
Myristylated protein (Cop-F7R)	NoF1-069	MVA-HANP-057	Ŷ		NoF1-069	65460	65957	498	forward	Ŷ		NoF1-069	68029	68526	498	forward	x	NoF1-069	67535	68032	498	forward
ER-localized membrane protein virion core protein (Con-ESR)	NoF1-070	MVA-HANP-058	Ŷ		NoE1-070	66068	66880	900	forward	Ŷ		NoE1-070	68637	60/158	822	forward	×	NoE1-070	68143	68064	930	forward
DNA polymerses (Con EQL)	NoE1 071	MVA HAND 050	~		NoE1 071	60000	60012	2012	roward	, U		NoE1 071	60465	72490	2019	roward	~	NoE1 071	69071	71099	2019	roward
Sullauted avideos (EAD linked) (Con E10D)	NoF1-071	MVA-HAND 060			NoF1-071	00000	70222	3010	ferward			NoF1-071	73514	72402	3010	ferward	*	NoF1-071	72020	71500	2010	feerend
Sumiyuryi oxuase (FAD-mikeu) (Cop-ETOK)	NoF1-072	MVA-HANF-000	×		NoF1-072	70337	70232	200	Torward	X		NoF1-072	72514	72801	288	Torward	x	NoF1-072	72020	72507	200	Torward
Vinon core protein (Cop-ETTE)	INOF 1-075	WIVA-HAINF-001	x		NOF1-075	/022/	/0010	390	reverse	x		NOF1-075	/2/90	/3185	390	reverse	x	NOF1-075	72302	72091	390	reverse
Membrane protein (Cop-O1L)	NoF1-074	MVA-HANP-062	х		NoF1-074	70603	72603	2001	reverse	х		NoF1-074	73172	75172	2001	reverse	x	NoF1-074	72678	74678	2001	reverse
		MVA-HANP-063 f																				
Glutaredoxin 1 (Cop-O2L)	NoF1-075	MVA-HANP-064	х		NoF1-075	72651	72977	327	reverse	х		NoF1-075	75220	75546	327	reverse	x	NoF1-075	74726	75052	327	reverse
Virus entry/fusion complex component (Cop-O3L)	NoF1-076	MVA-HANP-065	х		NoF1-076	73001	73108	108	reverse	х		NoF1-076	75570	75677	108	reverse	x	NoF1-076	75076	75183	108	reverse
DNA-binding core protein (Cop-IIL)	NoF1-077	MVA-HANP-066	х		NoF1-077	73123	74061	939	reverse	х		NoF1-077	75692	76630	939	reverse	х	NoF1-077	75198	76136	939	reverse
IMV membrane protein (Cop-I2L)	NoF1-078	MVA-HANP-067	х		NoF1-078	74068	74289	222	reverse	х		NoF1-078	76637	76858	222	reverse	x	NoF1-078	76143	76364	222	reverse
ssDNA-binding phosphoprotein (Cop-I3L)	NoF1-079	MVA-HANP-068	х		NoF1-079	74290	75099	810	reverse	х		NoF1-079	76859	77668	810	reverse	x	NoF1-079	76365	77174	810	reverse
Ribonucleotide reductase large subunit (Cop-I4L)	NoF1-080	MVA-HANP-069	х		NoF1-080	75182	77497	2316	reverse		х	MVA-HANP-069	77751	80066	2316	reverse	x	NoF1-080	77257	79572	2316	reverse
IMV protein VP13 (Cop-I5L)	NoF1-081	MVA-HANP-070	х		NoF1-081	77524	77763	240	reverse	x		NoF1-081	80093	80332	240	reverse	x	NoF1-081	79599	79838	240	reverse
Telomere-binding protein (Cop-I6L)	NoF1-082	MVA-HANP-071	х		NoF1-082	77782	78930	1149	reverse	x		NoF1-082	80351	81499	1149	reverse	x	NoF1-082	79857	81005	1149	reverse
Virion core cysteine protease (Cop-17L)	NoF1-083	MVA-HANP-072	х		NoF1-083	78923	80194	1272	reverse	х		NoF1-083	81492	82763	1272	reverse	x	NoF1-083	80998	82269	1272	reverse
RNA helicase, DExH-NPH-II domain (Cop-I8R)	NoF1-084	MVA-HANP-073	x		NoF1-084	80200	82230	2031	forward	х		NoF1-084	82769	84799	2031	forward	x	NoF1-084	82275	84305	2031	forward
Metalloprotease (Cop-G1L)	NoF1-085	MVA-HANP-074	х		NoF1-085	82234	84009	1776	reverse	x		NoF1-085	84803	86578	1776	reverse	x	NoF1-085	84309	86084	1776	reverse
Entry/fusion complex component (Cop-G3L)	NoF1-086	MVA-HANP-075	х		NoF1-086	84006	84341	336	reverse	х		NoF1-086	86575	86910	336	reverse	x	NoF1-086	86081	86416	336	reverse
VLTF (late transcription elongation factor) (Cop-G2R)	NoF1-087	MVA-HANP-076	х		NoF1-087	84335	84997	663	forward	х		NoF1-087	86904	87566	663	forward	x	NoF1-087	86410	87072	663	forward
Glutaredoxin-like protein (Cop-G4L)	NoF1-088	MVA-HANP-077	х		NoF1-088	84967	85341	375	reverse	х		NoF1-088	87536	87910	375	reverse	x	NoF1-088	87042	87416	375	reverse
FEN1-like nuclease (Cop-G5R)	NoF1-089	MVA-HANP-078	х		NoF1-089	85344	86651	1308	forward		х	MVA-HANP-078	87913	89217	1305	forward	x	NoF1-089	87419	88726	1308	forward
RNA polymerase subunit (RPO7) (Cop-G5.5R)	NoF1-090	MVA-HANP-079	х		NoF1-090	86659	86850	192	forward		х	MVA-HANP-07	89225	89416	192	forward	х	NoF1-090	88734	88925	192	forward
NLPc P60 superfamily protein (Cop-G6R)	NoF1-091	MVA-HANP-080	х		NoF1-091	86852	87349	498	forward		х	MVA-HANP-080	89418	89915	498	forward	x	NoF1-091	88927	89424	498	forward
Virion phosphoprotein, early morphogenesis (Cop-G7L)	NoF1-092	MVA-HANP-081	х		NoF1-092	87314	88429	1116	reverse		х	MVA-HANP-08	89880	90995	1116	reverse	х	NoF1-092	89389	90504	1116	reverse
CC Cop-G ORF B	overlap	-																				
VLTF-1 (late transcription factor 1) (Cop-G8R)	NoF1-093	MVA-HANP-082	х		NoF1-093	88460	89242	783	forward		x	MVA-HANP-082	91026	91808	783	forward	x	NoF1-093	90535	91317	783	forward
Entry/fusion complex component, myristylprotein (Cop-G9R)	NoF1-094	MVA-HANP-083	х		NoF1-094	89262	90284	1023	forward		x	MVA-HANP-08	91828	92850	1023	forward	x	NoF1-094	91337	92359	1023	forward
IMV membrane protein (Cop-L1R)	NoF1-095	MVA-HANP-084	x		NoF1-095	90285	91037	753	forward		x	MVA-HANP-084	92851	93603	753	forward	x	NoF1-095	92360	93112	753	forward
Viral membrane assembly proteins (VMAP) (Cop-L2R)	NoF1-096	MVA-HANP-085	x		NoF1-096	91069	91335	267	forward		х	MVA-HANP-08	93635	93898	264	forward	x	NoF1-096	93144	93410	267	forward
Internal virion protein (Con-L3L)	NoF1-097	MVA-HANP-086	×		NoF1-097	91325	92377	1053	reverse		x	MVA-HANP-08	93888	94940	1053	reverse	x	NoE1-097	93400	94452	1053	reverse
ss/dsDNA binding protein (VP8) (Con-L4R)	NoF1-098	MVA-HANP-087	×		NoF1-098	92402	93157	756	forward		x	MVA-HANP-08	94965	95720	756	forward	x	NoE1-098	94477	95232	756	forward
Entry and Fusion IMV protein (Con-L5R)	NoF1-099	MVA-HANP-088	×		NoF1-099	93167	93553	387	forward		x	MVA-HANP-08	95730	96116	387	forward	x	NoF1-099	95242	95628	387	forward
Virion morph (Con-IIR)	NoF1-100	MVA-HANP-089	×		NoF1-100	93510	93971	462	forward		×	MVA-HANP-08	96073	96534	462	forward	Y Y	NoE1-100	95585	96046	467	forward
Thymidine kinase (Con-12R)	NoF1-101	MVA-HANP-090	×		NoF1-101	93987	94520	534	forward		x	MVA-HANP-090	96550	97083	534	forward	x	NoE1-101	96062	96595	534	forward
Poly (A) polymerase small submit (VP39) (Con-I3R)	NoF1-102	MVA-HANP-091	Ŷ		NoF1-101	94588	95589	1002	forward		Ŷ	MVA-HANP-09	97149	98150	1002	forward	x	NoF1-102	96663	97664	1002	forward
RNA nolymerase subunit (RPO?2) (Con-14R)	NoF1-102	MVA-HANP-002	×		NoF1-102	95504	96061	558	forward		x	MVA-HANP-00	98065	98622	558	forward	x l	NoF1-102	97579	98136	558	forward
IMV membrane protein (Con-ISL)	NoF1-104	MVA-HANP-003	Ŷ		NoF1-103	96122	96523	402	reverse		x	MVA-HANP-00	98690	99091	402	reverse	x l	NoF1-103	98197	98598	402	reverse
RNA nohmerase subunit (RPO1/7) (Con 16D)	NoE1 105	MVA-HAND 004	~		NoE1 105	05620	100400	3951	forward		~	MALAND OO	00107	102057	3941	forward		NoE1 105	00121	107565	2861	forward
Tyr/Ser phoenbatase JEN_gamma inhibitor (Con-HII.)	NoF1-105	MVA-HANP.005	×		NoE1-105	100/197	101002	516	reverso		×	M/A-HAND 00	103054	10303/	516	reverse	×	NoE1-105	102562	102303	516	reverse
IMV membrane protein (Con-H2R)	NoE1 107	MVA-HAND 004	~	l	NoE1 107	101016	101002	570	forward			MVA-HAND 00	103034	103309	570	forward	×	NoF1 107	102002	103077	570	forward
MV honorin birding surface protein (Cop. H21.)	NoE1 109	MVA HAND 007	~		NoE1 100	101010	101363	079	roward		~	MALA HAND OO	103303	104132	075	roward		NoE1 100	103051	104640	070	rovorco
DADOA (DNA nol assessmentain) (Con 1141)	Nor1-108	MVA HAND 000	×		Nor1-105	103566	104052	3/8	reverse		×	WWATTANP-09	105130	103129	2/2	reverse	*	Nor1-108	104041	107030	3/0	reverse
IN 74 (NYA POLASSOC PIOLEII) (COP-THE)	10071-109	INI V A- FLAIN F-098	x	1	1401.1-108	102200	104903	2300	reverse		x	VIVA-TAINP-098	102120	10/21/	2300	Level26	х	INOL T- TOA	104041	10/026	2300	reverse

	N E1 110	MUA HAND 000	r	1		405400	405750	64.0					407700	400044	64.0		1		11 54 440	407044	107024	624	<i>.</i> .
VLTF-4 (tate transcription factor 4) (Cop-H3K)	NOF1-110	MVA-HAINP-099		×	VIVA-HANP-US	102139	105750	012	Torward		x	VIVA-HAINP-09	10//03	108314	612	Torward	x		NOF1-110	107214	10/834	021	Torward
DNA topoisomerase type I (Cop-H6R)	NoF1-111	MVA-HANP-100		x	MVA-HANP-10	105751	106695	945	forward		х	MVA-HANP-10	108315	109259	945	forward	х		NoF1-111	107835	108779	945	forward
CPV-B-116	overlap	-																					
Viral membrane assembly proteins (VMAP) (Cop-H7R)	NoF1-112	MVA-HANP-101		x	MVA-HANP-10	106732	107172	441	forward		х	MVA-HANP-10	109296	109736	441	forward	х		NoF1-112	108817	109257	441	forward
mRNA capping enzyme large subunit (Cop-D1R)	NoF1-113	MVA-HANP-102		×	MVA-HANP-10	107216	109750	2535	forward		х	MVA-HANP-10	109780	112314	2535	forward	х		NoF1-113	109301	111835	2535	forward
Virion core (Cop-D2L)	NoF1-114	MVA-HANP-103		x	MVA-HANP-10	109709	110149	441	reverse		х	MVA-HANP-10	112273	112713	441	reverse	х		NoF1-114	111794	112234	441	reverse
Virion core (Con-D3R)	NoF1-115	MVA-HANP-104		×	MVA-HANP-10	110142	110843	702	forward		x	MVA-HANP-10	112706	113407	702	forward	x		NoE1-115	112227	112940	714	forward
Uracil-DNA glycosylase DNA polymerase processi vity factor (Con-D4R)	NoF1-116	MVA-HANP-105		×	MVA-HANP-10	110843	111499	657	forward		v	MVA-HANP-10	113407	114063	657	forward	×		NoE1-116	112940	113596	657	forward
NTPase DNA primase (Con DSP)	NoF1 117	MVA HAND 106		~	MA HAND 10	111521	112000	2259	forward		~	MALA HAND 10	11/005	116452	2259	forward	×		NoE1 117	112620	110000	2259	forward
(Cop-Dok)	1401 1-117	MTTP-114141-100		^	NA-HANT-10	111331	113000	2550	Torward		^	VIVA-11AN1-10	114055	110452	2330	Torward	^		1001 1-117	113020	115505	2330	Torward
Morphogenesis, VETF-s (early transcription fact or small) (Cop-D6R)																							
	NoF1-118	MVA-HANP-107		х	VIVA-HANP-10	113929	115842	1914	forward		х	MVA-HANP-10	116493	118406	1914	forward	х		NoF1-118	116026	117939	1914	forward
RNA polymerase subunit (RPO18) (Cop-D7R)	NoF1-119	MVA-HANP-108		х	MVA-HANP-10	115869	116354	486	forward		х	MVA-HANP-10	118433	118918	486	forward	х		NoF1-119	117966	118451	486	forward
Carbonic anhydrase, GAG, binding IMV membrane protein (Con. D8L)																							
Carbonic annyarase, OAC-binding INTV memorane protein (Cop-DoE)	NoF1-120	MVA-HANP-109		х	VIVA-HANP-10	116317	117231	915	reverse		х	MVA-HANP-10	118881	119795	915	reverse	х		NoF1-120	118414	119328	915	reverse
mRNA decapping enzyme (Cop-D9R)	NoF1-121	MVA-HANP-110		х	VIVA-HANP-11	117273	117914	642	forward		х	MVA-HANP-11	119837	120478	642	forward	х		NoF1-121	119370	120011	642	forward
mRNA decapping enzyme (Cop-D10R)	NoF1-122	MVA-HANP-111		х	VIVA-HANP-11	117911	118657	747	forward	×		NoF1-122	120475	121221	747	forward	х		NoF1-122	120008	120754	747	forward
ATPase, NPH1 (Cop-D11L)	NoF1-123	MVA-HANP-112		х	VIVA-HANP-11	118658	120553	1896	reverse	x		NoF1-123	121222	123117	1896	reverse	х		NoF1-123	120755	122650	1896	reverse
mRNA capping enzyme small subunit (Con-D12L)	NoF1-124	MVA-HANP-113		×	MVA-HANP-11	120588	121451	864	reverse	x		NoF1-124	123151	124014	864	reverse	x		NoF1-124	122684	123547	864	reverse
VV Tan-unkown-16	overlap																						
Trimaric virion cost protain (rifampicin res) (Con-D131)	NoF1-125	MVA-HAND-114		~	M/A-HAND-11	121/192	122127	1656	reverse		v	M/A-HAND-11	12/0/15	125700	1656	reverse	×		NoE1-125	122579	125222	1656	reverse
VI TE 2 (hts temperature faster 2) (Car. A1L)	N-E1 126	MVA HAND 115		<u>^</u>	N-51 120	122402	120107	452	Teverse		^	N-51 100	124045	125700	452	Teverse			NoF1 125	125570	125255	452	TEVEISE
VLTF-2 (are transcription factor 2) (Cop-ATL)	NOF1-128	MVA-HANP-115	×		NOF1-126	123101	123013	453	reverse	x		NOF1-120	125/24	1201/0	455	reverse	x		NOF1-120	125257	125709	453	reverse
VL1F-5 (late transcription factor 3) (Cop-A2L)	NOF1-12/	MVA-HANP-116	×		N0F1-127	123634	124308	6/5	reverse	x		N0F1-127	126197	1268/1	6/5	reverse	x		NOF1-127	125/30	126404	6/5	reverse
S-S bond formation pathway protein (Cop-A2.5L)	NoF1-128	MVA-HANP-117	x		NoF1-128	124305	124538	234	reverse	x		NoF1-128	126868	127101	234	reverse	х		NoF1-128	126401	126634	234	reverse
P4b precursor (Cop-A3L)	NoF1-129	MVA-HANP-118		х	MVA-HANP-11	124553	126487	1935	reverse	х		NoF1-129	127116	129050	1935	reverse	х		NoF1-129	126649	128583	1935	reverse
39kDa virion core protein (Cop-A4L)	NoF1-130	MVA-HANP-119		х	VIVA-HANP-11	126540	127358	819	reverse	x		NoF1-130	129103	129957	855	reverse	х		NoF1-130	128636	129517	882	reverse
RNA polymerase subunit (RPO19) (Cop-A5R)	NoF1-131	MVA-HANP-120		x	VIVA-HANP-12	127396	127890	495	forward	x		NoF1-131	129995	130489	495	forward	х		NoF1-131	129555	130049	495	forward
Viral membrane assembly proteins (VMAP), core protein (Cop-A6L)	NoF1-132	MVA-HANP-121		x	MVA-HANP-12	127887	129005	1119	reverse	×		NoF1-132	130486	131604	1119	reverse	x		NoF1-132	130046	131164	1119	reverse
VETE-L (early transcription factor large) (Con- A7L)	NoF1-133	MVA-HANP-122		×	MVA-HANP-12	129029	131161	2133	reverse	×		NoE1-133	131628	133760	2133	reverse	v		NoF1-133	131188	133320	2133	reverse
VITE-3 3/kda subunit (Con-A8R)	NoF1-134	MVA-HAND-122		Ŷ	M/A-HAND-13	121215	122091	967	forward	, v		NoE1-134	122914	12/690	967	forward	~		NoE1-124	122274	124240	967	forward
Viril mambrane associated early membranesis protein (Con A01)	NoE1 125	MVA HAND 124		Û	MA HAND 12	122074	1222001	205	roward	~		NoF1 134	13/672	125020	249	roward	~		NoE1 125	124222	124590	249	roward
Viral memorate associated, early morphogenesis protein (Cop-A3E)	NOP1-135	MUA-HAND 124		· ^	VIVA-HANF-12	1520/4	132330	203	leverse	^		NUF1-155	134075	153020	340	leverse			NUF1-155	134233	134300	340	leverse
P4a precursor (Cop-AI0L)	N0F1-136	MVA-HANP-125		x	MVA-HANP-12	132359	135034	26/6	reverse	x		N0F1-136	135021	137702	2682	reverse	x		NOF1-136	134581	13/262	2682	reverse
Viral membrane assembly proteins (VMAP) (Cop-A1 1R)	NoF1-15/	MVA-HANP-126		x	MVA-HANP-12	135049	136005	957	forward	x		NoF1-137	137717	138673	957	forward	x		NoF1-137	137277	138233	957	forward
Virion core and cleavage processing protein (Cop-A12L)	NoF1-138	MVA-HANP-127	x		NoF1-138	136007	136585	579	reverse	x		NoF1-138	138675	139253	579	reverse	х		NoF1-138	138235	138813	579	reverse
IMV membrane protein, virion maturation (Cop-A13L)	NoF1-139	MVA-HANP-128	х		NoF1-139	136609	136821	213	reverse	х		NoF1-139	139277	139489	213	reverse	х		NoF1-139	138837	139049	213	reverse
Essential IMV membrane protein (Cop-A14L)	NoF1-140	MVA-HANP-129	x		NoF1-140	136929	137201	273	reverse	x		NoF1-140	139597	139869	273	reverse	х		NoF1-140	139157	139429	273	reverse
Non-essential IMV membrane protein (Cop-A14.5L)	NoF1-141	MVA-HANP-130	x		NoF1-141	137218	137379	162	reverse	×		NoF1-141	139886	140047	162	reverse	х		NoF1-141	139446	139607	162	reverse
Core protein (Cop-A15L)	NoF1-142	MVA-HANP-131	х		NoF1-142	137369	137653	285	reverse	х		NoF1-142	140037	140321	285	reverse	х		NoF1-142	139597	139881	285	reverse
Myristylated protein, essential for entry/fusion (Cop-A16L)	NoF1-143	MVA-HANP-132	x		NoF1-143	137637	138770	1134	reverse	x		NoF1-143	140305	141438	1134	reverse	х		NoF1-143	139865	140998	1134	reverse
IMV membrane protein (Con-A17L)	NoF1-144	MVA-HANP-133	×		NoF1-144	138773	139381	609	reverse	×		NoF1-144	141441	142049	609	reverse	×		NoF1-144	141001	141609	609	reverse
DNA belicase transcript release factor (Con-A18R)	NoF1-145	MVA-HANP-134	×		NoF1-145	139396	140877	1482	forward	× ×		NoF1-145	142064	143545	1482	forward	× ×		NoF1-145	141624	143105	1482	forward
Zing finger like protein (Con A101)	NoE1 146	MVA HAND 125	~		NoE1 146	140959	141001	224	roward	~		NoF1 145	142526	142750	224	roward	~		NoE1 146	142006	142210	224	roward
Zaite inger-ince protein (Cop-A19L)	101/1-140	WIVA-IIANT-155	^		NUF1-140	140030	141051	234	leverse	^		NUF1-140	145520	145735	234	leverse			NUF1=140	143000	145515	234	Teverse
IMV membrane protein, entry/fusion complex component (Cop-A21L)																							
	NoF1-147	MVA-HANP-136	x		NoF1-147	141092	141445	354	reverse	х		NoF1-147	143760	144113	354	reverse	х		NoF1-147	143320	143673	354	reverse
DNA polymerase processivity factor (Cop-A20R)	NoF1-148	MVA-HANP-137	х		NoF1-148	141444	142724	1281	forward	x		NoF1-148	144112	145392	1281	forward	х		NoF1-148	143672	144952	1281	forward
Holliday junction resolvase (Cop-A22R)	NoF1-149	MVA-HANP-138	x		NoF1-149	142654	143217	564	forward		х	MVA-HANP-13	145322	145885	564	forward	х		NoF1-149	144882	145445	564	forward
VITF-3 45kda subunit (Cop-A23R)	NoF1-150	MVA-HANP-139	х		NoF1-150	143237	144385	1149	forward		х	MVA-HANP-13	145905	147053	1149	forward	х		NoF1-150	145465	146613	1149	forward
RNA polymerase subunit (RPO132) (Cop-A24R)	NoF1-151	MVA-HANP-140	×		NoF1-151	144382	147876	3495	forward		х	MVA-HANP-14	147075	150545	3471	forward	х		NoF1-151	146610	150104	3495	forward
A-type inclusion protein (Con-A25I.)	NoF1-152	MVA-HAND-141 f	~		NoE1-152	1/795/	151620	2777	reverse		v	MALHAND-14	150550	150747	109	reverse	v		NoE1-152	150092	152959	2777	reverse
Labrown (CDV B 160)	ourlap	MITTELL 1-141	^		1401 1-152	147034	101050	3///	Teverse		^	VIVA-11ANT-14	130330	130/4/	150	Teverse	^		1001 1-152	150002	10000	5///	Teverse
Chkhown (Cr V-B-100)	overap						-																
P4c precursor (Cop-A26L)	NoF1-153	MVA-HANP-142	х		NoF1-153	151676	153244	1569	reverse		х	MVA-HANP-14	151333	152025	693	reverse	х		NoF1-153	153904	155472	1569	reverse
IMV surface protein, fusion protein (Cop-A27L)	NoF1-154	MVA-HANP-143	х		NoF1-154	153296	153628	333	reverse		х	MVA-HANP-14	152075	152407	333	reverse	х		NoF1-154	155524	155856	333	reverse
IMV MP Virus entry (Cop-A28L)	NoF1-155	MVA-HANP-144	x		NoF1-155	153629	154069	441	reverse		х	MVA-HANP-14	152408	152848	441	reverse	х		NoF1-155	155857	156297	441	reverse
RNA polymerase subunit (RPO35) (Cop-A29L)	NoF1-156	MVA-HANP-145	х		NoF1-156	154070	154987	918	reverse	x		NoF1-156	152849	153766	918	reverse	х		NoF1-156	156298	157215	918	reverse
IMV protein (Cop-A30L)	NoF1-157	MVA-HANP-146	x		NoF1-157	154950	155180	231	reverse	x		NoF1-157	153729	153959	231	reverse	х		NoF1-157	157178	157408	231	reverse
Viral membrane assembly proteins (VMAP) (Cop-A30.5L)	NoF1-158	MVA-HANP-147	×		NoF1-158	155213	155341	129	reverse	x		NoF1-158	153992	154120	129	reverse	x		NoF1-158	157441	157569	129	reverse
Hypothetical protein (Con. A31R)	NoF1-159	MVA-HANP-148	×		NoF1-159	155340	155753	414	forward	×		NoE1-159	154119	154532	414	forward	v		NoF1-159	157568	157981	414	forward
ATPaseIDNA packaging protein (Cop. A321)	NoF1-160	MVA-HAND-140	~		NoE1-160	155722	156522	910	reverse	, v		NoE1-160	15/502	155211	910	reverse	~		NoE1-160	157051	159760	910	reverse
Arr ascistva packaging protein (Cop-AS2E)	1401 1-100	M (74-11-14)	^		1401 1-100	155725	130332	010	Teverse	^		1001 1-100	134502	155511	010	Teverse	^		1001 1-100	15/551	100700	010	Teverse
EEV membrane phosphoglycoprotein, C-type lectin -like domain (Cop-A33R)	NoE1 141	MUA HAND 150		1	NoE4 4C4	150050	157225	670	former			NoE1 1C1	155400	150004	670	former			NoE1 1CT	100000	150453	670	forumed
	NOF1-101	MUA-HAND-150	X	1	NOF1-161	120020	15/225	5/6	rorward	X		NOF1-161	155429	150004	5/6	rorward	х		NOF 1-161	1299/9	159453	5/b	rorward
C-type lectin-like IEV/EEV glycoprotein (Cop-A34R)	NoF1-162	MVA-HANP-151	X	<u> </u>	NoF1-162	157249	157755	507	torward	x		NoF1-162	156028	156534	507	torward	х		NOF1-162	159477	159983	507	torward
VV-Cop-A ORF M	overlap	-			-				L .							<u> </u>							
MHC class II antigen presentation inhibitor (Cop-A35R)	NoF1-163	MVA-HANP-152	х	I	NoF1-163	157801	158331	531	forward	х		NoF1-163	156580	157110	531	forward	х		NoF1-163	160029	160559	531	forward
IEV transmembrane phosphoprotein (Cop-A36R)	NoF1-164	MVA-HANP-153	х		NoF1-164	158395	159063	669	forward	х		NoF1-164	157174	157842	669	forward	х		NoF1-164	160623	161291	669	forward
Hypothetical protein (Cop-A37R)	NoF1-165	MVA-HANP-154	х		NoF1-165	159130	159921	792	forward	x		NoF1-165	157909	158700	792	forward	х		NoF1-165	161358	162149	792	forward
Unknown (Gar-A43R)	NoF1-166	-	x		NoF1-166	160029	160214	186	forward	x		NoF1-166	158808	158993	186	forward	x		NoF1-166	162257	162442	186	forward
CD47-like, integral membrane protein (Cop-A38L)	NoF1-167	MVA-HANP-155	x		NoF1-167	160211	161044	834	reverse	x		NoF1-167	158990	159823	834	reverse	x		NoF1-167	162439	163272	834	reverse
		MVA-HANP-156 f	×		NoF1-168	161060	162271	1212	forward	×		NoF1-168	159839	161050	1212	forward	×		NoE1-168	163288	164499	1212	forward
Semaphorin (Cop-A39R)	NoF1-168	MVA HAND 107 f	-	1						^							^						
		191 V A-FLAINP-107	1	1	1	1	1	1	1			1		1		1		1					

x 1.4 4 (20 1.4000)	NY 194 4 40		1	1					1	1	1						r 1					1
Lectin homolog (Cop-A40R)	NoF1-169	MVA-HANP-158	x		NoF1-169	162293	162775	483	forward	х		NoF1-169	161072	161554	483	forward	х	NoF1-169	164521	165003	483	forward
Chemokine binding protein (Cop-A41L)	NoF1-170	MVA-HANP-159	х		NoF1-170	162873	163535	663	reverse	х		NoF1-170	161652	162314	663	reverse	х	NoF1-170	165101	165763	663	reverse
Profilin-like protein, ATI-localized (Cop-A42R)	NoF1-171	MVA-HANP-160	х		NoF1-171	163714	164115	402	forward	х		NoF1-171	162493	162894	402	forward	x	NoF1-171	165942	166343	402	forward
Type I membrane elycoprotein (Con-A43R)	NoF1-172	MVA-HANP-161	×		NoF1-172	164153	164734	582	forward	x		NoF1-172	162932	163513	582	forward	x	NoF1-172	166381	166962	582	forward
Hunothatical protain (Con M2 5P)	NoE1 172	MVA HAND 162	~		NoE1 172	164727	164092	246	forward	~		NoF1 172	162532	162761	246	forward	×	NoE1 172	100001	167210	246	forward
Hypothetical protein (Cop-14-5.5K)	1101 1-175	MUT-1011-102	^		14011-175	104737	104502	240	Torward	^		14011-175	105510	105/01	240	Torward	^	14011-175	100505	10/210	240	Torward
3 beta-hydroxysteroid dehydrogenase delta 5->4 isomerase (Cop-A44L)																						
	NoF1-174	MVA-HANP-163		х	MVA-HANP-16	5 165074	166114	1041	reverse	х		NoF1-174	163853	164893	1041	reverse	х	NoF1-174	167302	168342	1041	reverse
Inactive Cu-Zn superoxide dismutase-like virion protein (Cop-A45R)	NoF1-175	MVA-HANP-164		×	MVA-HANP-16	166161	166526	366	forward	x		NoF1-175	164940	165317	378	forward	x	NoF1-175	168389	168766	378	forward
II 1/TI B simpling inhibitor (Con. A46B)	NoE1 176	MUA HAND 165			MA HAND 10	100101	1(7330	700	forward			NoF1 175	101010	100000	722	ferward	~	NoF1 170	100305	100/00	722	feeward
IL-1/ILK signaling innoloci (Cop-A40K)	N0F1-170	MVA-HAINF-103		x	VIVA-HAINP-10	100210	10/238	723	TOrward	X		NOP1-176	105507	100029	725	TOrwaru	X	NOP1-1/0	108/30	109478	725	Torwaru
Immunoprevalent protein (Cop-A4/L)	NoF1-1//	MVA-HANP-100		X	MVA-HANP-16	16/286	168002	/1/	reverse	X		NOF1-1//	166165	166899	/35	reverse	x	NOF1-1//	169614	1/0348	/35	reverse
Thymidylate kinase (Cop-A48R)	NoF1-178	MVA-HANP-167		х	MVA-HANP-16	168101	168715	615	forward	х		NoF1-178	166772	167614	843	forward	х	NoF1-178	170221	171063	843	forward
Peterin alternational and the second and the (Constant Adop)																						
ruauve pilospilou aisierasejailon u aisport pio tein (Cop-A49R)	NoF1-179	MVA-HANP-168		x	MVA-HANP-16	168739	169227	489	forward	х		NoF1-179	167663	168150	488	forward	x	NoF1-179	171112	171600	489	forward
ATP-dependent DNA ligase (Cop-A50R)	NoF1-180	MVA-HANP-169		Y	MVA-HANP-16	169259	170917	1659	forward		x	MVA-HANP-16	168183	169841	1659	forward	x	NoF1-180	171633	173297	1665	forward
Hunothatical protein (Con A51D)	NoE1 181	MVA HAND 170		~	AVA HAND 17	170070	170115	1146	forward			MALA HAND 1	160205	171022	11/6	forward	~	NoE1 191	172250	174254	1005	forward
Hypothetical protein (Cop-ASTK)	N0F1-181	MVA-HANT-1/0		X	VIVA-HAINP-17	1/09/0	1/2115	1140	TOrward		X	VIVA-HAINP-17	109667	1/1052	1140	TOrwaru	X	INOP1-161	1/3330	1/4304	1005	Torwaru
TollIII - 1 recentor-like protein II - 1 NEkB signalling inhibitor (Con-A52R)																						
Tourie Treeptor are protein in 1,111 kb signianing analoust (cop 1.0210)	NoF1-182	-															x	NoF1-182	174423	174995	573	forward
TNF receptor (CmrC) (Cop-A53R)	-	-																				1
CPV-B-192	NoF1-183																x	NoF1-183	175759	175929	171	forward
011 0 1/2	11011 105				-												^	1107 1 200	1,5755	1,3525		Tormana
BTB Kelch-domain containing protein; CRL complex (Cop-A55R)	N. E1 104																					
51 ,	NoF1-184	-															х	NoF1-184	176133	177824	1692	forward
Hemagglutinin (Cop-A56R)	NoF1-185	MVA-HANP-171		х	MVA-HANP-17	175437	176384	948	forward		х	MVA-HANP-17	174354	175301	948	forward	x	NoF1-185	177876	178790	915	forward
Guanylate kinase (Cop-A56.5R)	NoF1-186	MVA-HANP-172 f		×	MVA-HANP-17	176680	176973	294	forward		×	MVA-HANP-17	175597	175890	294	forward	x	NoF1-186	178807	179400	594	forward
SerThr Kingse (Con-B1R)	NoF1-187	MVA-HANP-173			MVA-HAND-17	177124	178026	903	forward			MVA-HAND-17	176040	176042	003	fooward	v	NoE1-187	170550	180449	900	forward
Ser The Reader (Cop-BTR)	1101 1-107	MVICIER (175		<u>^</u>	100 1001-17	1//124	170020	505	Torward		<u> </u>	WATAN 1	170040	1/0542	505	Torward	^	1401 1-107	175550	100445	500	Torward
		MVA-HANP-174		х	MVA-HANP-17	178165	178455	291	forward		х	MVA-HANP-17	4 177081	177371	291	forward	х	NoF1-188	180519	182036	1518	forward
Schlafen (Cop-B2R)	NoF1-188	MVA-HANP-175 f		x	MVA-HANP-17	178310	178741	432	forward		x	MVA-HANP-17	177226	177657	432	forward						
		MVA-HANP-176		x	MVA-HANP-17	178938	179477	540	forward		x	MVA-HANP-17	177854	178393	540	forward						
			1																			1 4 1
Ankvrin (Cop-B4R)		MVA-HANP-1//		x	MVA-HANP-1/	1/9/04	180237	534	forward		X	MVA-HANP-1	1/8620	1/9153	534	forward	x	NOF1-189	182300	183985	1686	forward
, (1)	NoF1-189	MVA-HANP-178 f		х	VIVA-HANP-17	180128	181375	1248	forward		х	MVA-HANP-17	179044	180273	1230	forward						
EEV type-1 membrane glycoprotein, protective an tigen (Cop-B5R)	NoF1-190	MVA-HANP-179	х		NoF1-190	181479	182432	954	forward		х	MVA-HANP-17	180361	181314	954	forward	х	NoF1-190	184089	185042	954	forward
Ankyrin-like protein (Cop-B6R)	NoF1-191	MVA-HANP-180	×		NoF1-191	182531	182830	300	forward		x	MVA-HANP-18	181411	181932	522	forward	x	NoF1-191	185141	185440	300	forward
Virulance EP resident (Con B7P)	NoE1 102	MVA HAND 181			NoE1 102	192104	192640	EAG	forward				191070	102502	E24	forward	~	NoE1 102	105714	196260	EAG	forward
viruence, EK reskeni (Cop-B/K)	1011-192	MWA-11AINI -101	^		11011-152	103104	103045	540	TOTWalu		^	VIVA-HAINF-10	1019/0	102303	334	TOTWATU	^	NUF 1º 152	103/14	100235	540	Torwaru
Soluble IFN-g receptor-like protein (Cop-B8R)	NoF1-193	MVA-HANP-182	х		NoF1-193	183701	184501	801	forward		х	MVA-HANP-18	182558	183238	681	forward	х	NoF1-193	186311	187111	801	forward
ER-localized apoptosis regulator (Cop-B9R)	NoF1-194	MVA-HANP-183	х		NoF1-194	184522	185259	738	forward		х	MVA-HANP-18	183395	183613	219	forward	x	NoF1-194	187132	187869	738	forward
Kelch-like protein (Cop-B10R)	NoF1-195	MVA-HANP-184	х		NoF1-195	185406	186911	1506	forward		х	MVA-HANP-18	183576	184052	477	forward	x	NoF1-195	188016	189521	1506	forward
Hynothetical protein (Con-B11R)	NoF1-196	MVA-HANP-185	×		NoF1-196	186993	187217	225	forward		Y	MVA-HANP-18	184174	184348	225	forward	x	NoF1-196	189603	189827	225	forward
SarThr Kinesa (Con B12B)	NoE1 107	MVA HAND 186	~		NoE1 107	107304	100147	864	forward				10/110	105366	057	forward	×	NoE1 107	100000	100757	964	forward
Ser The Kindse (Cop-D12K)	101/1-197	MWA-HAINI -100	^		NOF 1* 157	10/204	10014/	004	TOTWalu		^	VIVA-HAINF-10	104413	163200	032	TOTWATU	^	NUF 1º 157	105054	150/5/	004	Torwaru
Sernin 1.2.3 (Con-K2L)	NoF1-198	MVA-HANP-187	х		NoF1-198	188244	189278	1035	forward		х	MVA-HANP-18	185374	185724	351	forward	x	NoF1-198	190854	191888	1035	forward
Scipii 1,2,5 (Cop-K2D)	1401 1-150	MVA-HANP-188 f									x	MVA-HANP-18	185699	186367	669	forward						
Hynothetical protein (Con-C16L)	NoF1-199	MVA-HANP-189	×		NoF1-199	189409	189858	450	forward		x	MVA-HANP-18	186443	186874	432	forward	x	NoF1-199	192019	192468	450	forward
II that months (Con P1(P))	N-E1 200	MUA HAND 100	, î		NUT1-100	100400	100000	430	forward			NIVA TIANT - 10	400050	100074	432	forward	^ 	14011-100	102010	102500	450	forward
IL-1 beta receptor (Cop-BIOR)	NoF1-200	MVA-HANP-190	x		N0F1-200	189942	190919	9/8	forward	X		N0F1-200	186958	18/935	9/8	torward	X	N0F1-200	192552	193529	9/8	Torward
IL-1 beta inhibitor (Cop-B1/L)	NoF1-201	MVA-HANP-191	х		NoF1-201	190967	191989	1023	reverse		х	MVA-HANP-19	187981	189003	1023	reverse	X	NoF1-201	193577	194599	1023	reverse
Ankyrin (Cop-B18R)	NoF1-202	MVA-HANP-192	х		NoF1-202	192131	193855	1725	forward		х	MVA-HANP-19	189143	190867	1725	forward	х	NoF1-202	194741	196465	1725	forward
IFN-alpha beta receptor glycoprotein (Cop-B19R)	NoF1-203	MVA-HANP-193 f	х	1	NoF1-203	193874	194971	1098	forward	x	1	NoF1-203	190886	191983	1098	forward	x	NoF1-203	196484	197581	1098	forward
Ankvrin (Con-B20R)	NoF1-204		×	1	NoF1-204	195022	197380	2358	forward	x	1	NoF1-204	192044	194401	2358	forward	x	NoF1-204	197642	199999	2358	forward
CPV-R-214	Omelan		2	1	1101 2 204	155052	157555	2000			1		102014	101101	2000	10111010			15/0-12	133333	2000	10.1010
Lable Bar and a (BDA 127)	N-EL 205	-	<u> </u>	+	N- 54 200	407400	400467	4674		l	+	N - 54 205	40450	406477	4674	fam. 1		N. 54 395	2004.02	204775	4674	- famme i
kekn-ike protein (EVM-167)	N0F1-205	-	X		N0F1-205	19/492	199165	16/4	torward	x		N0F1-205	194504	1961/7	16/4	torward	X	NOF1-205	200102	201//5	16/4	torward
Hypothetical protein (Cop-C11.5R)	-	-	L		_		I	1		I			1					I		L		L
Serpin 1,2,3 (Cop-K2L)	NoF1-206	-	х		NoF1-206	199345	200454	1110	forward	х		NoF1-206	196357	197466	1110	forward	х	NoF1-206	201955	203064	1110	forward
Hypothetical protein (Cop-C14L)	NoF1-207	-	х		NoF1-207	200631	201212	582	forward	х		NoF1-207	197643	198224	582	forward	x	NoF1-207	203241	203822	582	forward
Surface elyconrotein	NoF1-208	MVA-HAND 104 f	U		NoE1 209	201450	207222	5766	forward	U.	1	NoE1 309	102470	201725	5766	forward	v	NoE1 200	204050	200022	5766	forward
Adamic Group Clot	N.E1 200	MINA-HAINE-194	x		NUF1-208	201436	20/223	5/00	TOTWalu	X		Nur1-208	1504/0	204233	J/00	forwaru	^	NUF 1-208	204000	203033	5/00	forwaru
Ankym (Cop-C19L)	NoF1-209		х		NoF1-209	207440	209245	1806	torward	х		NOF1-209	204452	206257	1806	torward	x	NOF1-209	210050	211855	1806	torward
INF receptor (CrmD)	NoF1-210	-	х	1	NoF1-210	209252	210220	969	forward	х	1	NoF1-210	206264	207232	969	forward	х	NoF1-210	211862	212830	969	forward
Hypothetical protein (Cop-C16L)	NoF1-211	MVA-HANP-195	х		NoF1-211	210894	211355	462	forward	х		NoF1-211	207906	208367	462	forward	х	NoF1-211	213504	213965	462	forward
		MVA-HANP-196 f	×	-	NoF1-212	211568	213412	1845	forward	×	1	NoF1-212	208582	210588	2007	forward	x	NoF1-212	214184	216190	2007	forward
Ankyrin (Cop-C17L)	NoF1-212	Anti Man in the	-	1	1101 1 212		210112			-	+		200002		2007	10111010					2007	
		MVA-HANP-197		<b> </b>		<b> </b>	1						I					I		l		+
Ankyrin-like repeat containing protein	NoF1-213	-		I		I				х		NoF1-213	210628	210717	90	forward	x	NoF1-213	216230	216319	90	forward
Ankyrin (Cop-C19L)	NoF1-214	MVA-HANP-198 f		x	MVA-HANP-19	213520	214050	531	forward	х		NoF1-214	210799	212565	1767	forward	x	NoF1-214	216401	218167	1767	forward
TNE recentor (CmB) (Con-C22L)	NoF1-215		1	1	1	1	1		1	x	1	NoF1-215	212643	213716	1074	forward	x	NoF1-215	218245	219318	1074	forward
Chambia histor antis (Can C221)	1107 1-215		1	1				1	1.	1	1		212045	210/10	2014				210270	223310	20/4	
Chemokine binding protein (Cop-C23L)	NoF1-216	MVA-HANP-199	l	х	MVA-HANP-19	214482	214892	411	forward	х	<b> </b>	NoF1-216	213790	214527	738	forward	х	NoF1-216	219392	220129	738	forward
CPV-B-002	NoF1-217	-	х		NoF1-217	215115	215342	228	forward	х		NoF1-217	214556	214783	228	forward	х	NoF1-217	220158	220385	228	forward

	CPXV-No-F1	MVA-HANP				R10			-		-	R11							R12				
Function	CDS	CDS	CPXV- NoF1	MVA- HANP	CDS	Start	Stop	Length	Direction	CPXV- NoF1	MVA- HANP	CDS	Start	Stop	Lengt h	Direction	CPXV- NoF1	MVA- HANP	CDS	Start	Stop	Lengt h	Directio n
CPV-B-002	NoF1-001	-	х		NoF1-001	90	317	228	reverse	х		NoF1-001	1206	1433	228	reverse							
Chemokine binding protein (Cop-C23L)	NoF1-002	MVA-HANP-001 f	х		NoF1-002	346	1083	738	reverse	х		NoF1-002	1462	2199	738	reverse		x	MVA-HANP-001	1095	1505	411	reverse
CPV-B-004	overlap	-																	-				
TNF receptor (CrmB) (Cop-C22L)	NoF1-003	-	x		NoF1-003	1157	2230	1074	reverse	х		NoF1-003	2273	3346	1074	reverse							
Ankyrin (Cop-C19L)	NoF1-004	MVA-HANP-002	x		NoF1-004	2308	4074	1767	reverse	х		NoF1-004	3424	5190	1767	reverse		x	MVA-HANP-002	1937	2467	531	reverse
Ankyrin-like repeat containing protein	N0F1-005	-	x		NOF1-005	4156	4245	90	reverse	x		NOF1-005	5272	5361	90	reverse							
	N. 74 004	MVA-HANP-003	x		NoF1-006	4285	6291	2007	reverse	х		NoF1-006	5401	7407	2007	reverse		x	MVA-HANP-003	2988	3125	138	reverse
Ankyrin (Cop-C1/L)	N0F1-006	MVA-HANP-004																х	MVA-HANP-004	3155	3463	309	reverse
		MVA-HANP-005																x	MVA-HANP-005	3540	4241	702	reverse
Hypothetical protein (Cop-C16L)	NoF1-007	-	x		NoF1-007	6506	6967	462	reverse	x		NoF1-007	7620	8081	462	reverse	x		NoF1-007	4309	4770	462	reverse
RTB Kelch-domain containing protein: CPL complex (Con-A55P)	NOF1-008	-	×		NOF1-008	9104	9607	504	reverse	x		NOF1-008	0219	8905	504	reverse	x		NOF1-008	5007	6500	504	reverse
Ankyrin (Con-B20R)	NoF1-010		x		NoF1-009	9024	11039	2016	reverse	x		NoF1-009	10138	12153	2016	reverse	×		NoF1-009	6827	8842	2016	reverse
C-type lectin domain containing protein	NoF1-011	-	x		NoF1-010	11266	11475	210	reverse	x		NoF1-010	12380	12589	210	reverse	x		NoF1-011	9069	9278	210	reverse
BTB Kelch-domain containing protein; CRL complex (Cop-A55R)	NoF1-012	-	х		NoF1-012	11903	12514	612	reverse	х		NoF1-012	13017	13628	612	reverse	x		NoF1-012	9706	10317	612	reverse
TNF receptor (CrmB) (Cop-C22L)	NoF1-013	-	х		NoF1-013	12589	13197	609	reverse	х		NoF1-013	13703	14311	609	reverse	х		NoF1-013	10392	11000	609	reverse
TNF-alpha receptor like protein	NoF1-014	-	х		NoF1-014	13194	13526	333	reverse	х		NoF1-014	14308	14640	333	reverse	x		NoF1-014	10997	11329	333	reverse
Ankyrin (Cop-B18R)	NoF1-015	-			deleted					х		NoF1-015	14715	17018	2304	reverse			deleted				—
Ankyrn (CPXV-017)	NoF1-016	-			deleted					x		NoF1-016	17294	18601	1308	reverse	1		deleted				
NIF V-Z-INSK Ankyrin (Con-B18R)	NoF1-017 NoF1-018	-			deleted					×		NOF1-017 NoF1-019	18700	21802	2616	reverse	<u> </u>		deleted				<u> </u>
Host range protein	NoF1-019	-			deleted					×		NoF1-018	210/1	21055	510	reverse			deleted				
Secreted EGF-like protein (Cop-C11R)	NoF1-020	MVA-HANP-006			deleted					×		NoF1-020	22626	23051	426	forward			deleted				
IL-1 receptor antagonist (Cop-C10L)	NoF1-021	MVA-HANP-007			deleted					x		NoF1-020	23204	24199	996	reverse			deleted				1
Zinc finger-like protein	NoF1-022	MVA-HANP-008 f			deleted					х		NoF1-022	24714	25442	729	forward			deleted				
Soluble IL-18 binding protein (Bsh-D7L)	NoF1-023	MVA-HANP-009			deleted					х		NoF1-023	25591	25971	381	reverse			deleted				
		MVA-HANP-010 <sup>f</sup>			deleted					x		NoF1-024	26030	28045	2016	reverse			deleted				
		MVA-HANP-011 f			deleted														deleted				
Ankyrin Host Range (Bang-D8L)	NoF1-024	MVA-HANP-012 f			deleted														deleted				
		MVA-HANP-013 f			deleted														deleted				
		MVA-HANP-014 f			deleted														deleted				
ANK-containing protein	NoF1-025	MVA-HANP-015			deleted					x		NoF1-025	28159	28350	192	reverse			deleted				
		MVA-HANP-016 f			deleted					x		NoF1-026	28524	30428	1905	reverse			deleted				
Ankyrin; Type I IFN resistance (Cop-C9L)	NoF1-026	MVA-HANP-017 f			deleted														deleted				
		MVA-HANP-018 f			deleted														deleted				
Unknown (Cop-C8L)	NoF1-027	MVA-HANP-019			deleted					x		NoF1-027	30470	31027	558	reverse			deleted				1
Type 1 IFN inhibitor (Cop-C7L)	NoF1-028	MVA-HANP-020			deleted					х		NoF1-028	31099	31551	453	reverse			deleted				
Bcl-2-like protein, IFN-beta inhibitor (Cop-C6L )	NoF1-029	MVA-HANP-021	x		NoF1-029	13907	14374	468	reverse	х		NoF1-029	31782	32249	468	reverse	х		NoF1-029	11710	12177	468	reverse
Kelch-like protein (Cop-C5L)	overlap	-																					
Kelch-like protein (Cop-C5L)	NoF1-030	-	х		NoF1-030	14707	15084	378	reverse	х		NoF1-030	32582	32959	378	reverse	x		NoF1-030	12510	12887	378	reverse
IL-1 receptor antagonist (Cop-C10L)	NoF1-031	-	x		NoF1-031	15145	16092	948	reverse	x		NoF1-031	33020	33967	948	reverse	x	-	NoF1-031	12948	13895	948	reverse
Complement binding (secreted) (Cop-C3L)	NoF1-032 NoF1-022	-	x		NOF1-032	15159	10953	/95	reverse	x		NoF1-032	34034	34828	795	reverse	x		N0F1-032	13962	14/56	1520	reverse
Putative TLR signalling inhibitor (Con-C11)	NoF1-034	-	× v		NoF1-033	18623	19261	630	reverse	v		NoF1-033	364991	37126	1228	reverse	v	-	NoF1-033	16426	17064	1222	reverse
Anti-anoptotic Bcl-2-like protein (Con-N1L)	NoF1-035	MVA-HAND-022 f	v		NoE1-025	10202	10656	254	reverse	v		NoE1-025	27179	27521	254	reverse	v		NoE1-025	17106	17450	254	reverse
Alpha amanatin target protein (Cop-N2L)	NoF1-036	MVA-HANP-022 MVA-HANP-023	×		NoF1-035	19778	20308	531	reverse	x		NoF1-035	37653	38183	531	reverse	×		NoF1-035	17581	18111	531	reverse
													1				1	1					
ANK-containing protein; apoptosis inihibitor (Cop-M1L)	NoF1-037	-	×		NoF1-037	20351	21766	1416	reverse	x		NoF1-037	38226	39641	1416	reverse	×		NoF1-037	18154	19569	1416	reverse
NFkB inhibitor (Cop-M2L)	NoF1-038	-	х		NoF1-038	21744	22406	663	reverse	х		NoF1-038	39619	40281	663	reverse	x		NoF1-038	19547	20209	663	reverse
Ankyrin NFkB inhibitor (Cop-K1L)	NoF1-039	MVA-HANP-024 f	x		NoF1-039	22530	23387	858	reverse	x		NoF1-039	40405	41262	858	reverse	x		NoF1-039	20333	21190	858	reverse
Serpin 1,2,3 (Cop-K2L)	NoF1-040	MVA-HANP-025	х		NoF1-040	23745	24866	1122	reverse	х		NoF1-040	41620	42741	1122	reverse	x		NoF1-040	21548	22669	1122	reverse
IFN resistance, PKR eIF-alpha inhibitor (Cop-K3 L)	NoF1-041	MVA-HANP-026	х		NoF1-041	24917	25183	267	reverse	х		NoF1-041	42792	43058	267	reverse	х		NoF1-041	22720	22986	267	reverse
Phospholipase-D-like protein (Cop-K4L)	NoF1-042	MVA-HANP-027		х	VIVA-HANP-02	25243	26517	1275	reverse	х		NoF1-042	43118	44392	1275	reverse	x		NoF1-042	23046	24320	1275	reverse
Monoglyceride lipase (Cop-K5L/K6L)	NoF1-043	MVA-HANP-028 f	х		NoF1-043	26545	27375	831	reverse	х		NoF1-043	44420	45250	831	reverse	x	<b> </b>	NoF1-043	24348	25178	831	reverse
op 1 ( 1 )		MVA-HANP-029 t																					<u> </u>
Host immune response repressor (Cop-K7R)	NoF1-044	MVA-HANP-030	x		NoF1-044	27513	27962	450	forward	х		NoF1-044	45388	45837	450	forward	x	I	NoF1-044	25316	25765	450	forward
CPV-B-047	overlap	-																					
Caspase-9 (apoptosis) inhibitor (mitochondrial- associated) (Cop-F1L)	NoF1-045	MVA-HANP-031	×		NoF1-045	28036	28779	744	reverse	×		NoF1-045	45911	46654	744	reverse	×		NoF1-045	25839	26582	744	reverse
dUTPase (Cop-F2L)	NoF1-046	MVA-HANP-032	x		NoF1-046	28779	29222	444	reverse	x		NoF1-046	46654	47097	444	reverse	x	1	NoF1-046	26582	27025	444	reverse
Kelch-like protein (Cop-F3L)	NoF1-047	MVA-HANP-033	x		NoF1-047	29246	30688	1443	reverse	х		NoF1-047	47121	48563	1443	reverse		x	MVA-HANP-033	27049	28479	1431	reverse
Ribonucleotide reductase small subunit (Cop-F4L)	NoF1-048	MVA-HANP-034	x		NoF1-048	30699	31700	1002	reverse	х		NoF1-048	48574	49575	1002	reverse		x	MVA-HANP-034	28490	29449	960	reverse
36kDa maior membrane protein (Con-F5L)	NoF1-049	MVA-HANP-035 f	х		NoF1-049	31690	32655	966	reverse	х		NoF1-049	49565	50530	966	reverse		x	MVA-HANP-035	29481	29774	294	reverse
		MVA-HANP-036 f														1	1	x	MVA-HANP-036	29743	30399	657	reverse

H 4 4 4 1 (0 FG)	N. 51.050	NULL VILLED 027	1					1	T						1	1						
Hypothetical protein (Cop-F6L)	NoF1-050	MVA-HANP-037	x	NoF1-050	32685	32900	216	reverse	х		NoF1-050	50560	50775	216	reverse		х	MVA-HANP-037	30429 3	0653	225 r	reverse
Hypothetical protein (Cop-F7L)	NoF1-051	MVA-HANP-038	х	NoF1-051	32916	33161	246	reverse	х		NoF1-051	50791	51036	246	reverse		х	MVA-HANP-038	30669 3	0911	243 r	reverse
Cytoplasmic protein (Cop-F8L)	NoF1-052	MVA-HANP-039	x	NoF1-052	33444	33641	198	reverse	х		NoF1-052	51313	51510	198	reverse		х	MVA-HANP-039	31058 3	1255	198 1	reverse
S-S bond formation pathway protein substrate (Cop-F9L)	NoF1-053	MVA-HANP-040	x	NoE1-053	33702	34340	639	reverse	×		NoF1-053	51571	52209	639	reverse		×	MVA-HANP-040	31315 3	1953	639	reverse
Eccantial Sar Thr kinaca morph (Con E101)	NoE1 054	MVA HAND 041		NoE1 0E4	24227	25646	1220	rovorco			NoE1 0E4	52106	52515	1220	rovorco			MUA HAND 041	21040 2	2250 4	1220	rovorco
Lissendar Sel The Kalase histori (Cop-110E)	11011-054	MW1-12101-041	<u>^</u>	1401 1-034	54527	33040	1520	Teverse	^		1011-054	52150	55515	1520	TEVEISE		^	WINA-HANI -041	51540 5.	5255 1	.520 1	TEVEISE
VV_Cop-F ORF D	overap	-			_		_	-											$\vdash$			
Dho A sionalling inhibiton view relates metal a (Con E111.)		MVA-HANP-042 <sup>f</sup>	x	NoF1-055	35669	36733	1065	reverse	х		NoF1-055	53538	54602	1065	reverse		х	MVA-HANP-042	33282 3	3536	255 r	reverse
KIOA signaming minotor, virus release proter ii (Cop-FTTL)	NoE1-055	MVA-HANP-0/3															v	MVA-HAND-043	33003 3	//205	303	reverse
EEV moturation motion (Con E12L)	NoE1 056	MVA HAND 044		No.51.050	26776	20000	1005				N=51.05C	FACAE	50540	1005			^	NeE1 OFC	24220 2	42.55	1005	reverse
EEV maturation protein (Cop-F12L)	NOF1-030	MVA-HANF-044	x	NOF1-050	30770	36060	1905	reverse	x		NOF1-050	54045	50549	1905	reverse	x		NOF1-056	34336 3	5242 1	.905 1	reverse
Palmitylated EEV membrane glycoprotein (Cop-F13 L)	NoF1-05/	MVA-HANP-045	x	N0F1-05/	38/14	39832	1119	reverse	х		NOF1-057	56583	5//01	1119	reverse	х		NOF1-057	36276 3	/394 ]	.119 r	reverse
Unknown (Cop-F14L)	NoF1-058	MVA-HANP-046	x	NoF1-058	39850	40071	222	reverse	х		NoF1-058	57719	57940	222	reverse	х		NoF1-058	37412 3	7633	222 r	reverse
IMV protein (Cop-F14.5L)	-	MVA-HANP-047																				
CPV-B-063	NoF1-059	-	x	NoF1-059	40118	40276	159	forward	х		NoF1-059	57987	58145	159	forward	х		NoF1-059	37680 3	7838	159 f	forward
Unknown conserved protein (Con-F15L)	NoF1-060	MVA-HANP-048	x	NoE1-060	40344	40820	477	reverse	×		NoF1-060	58213	58689	477	reverse	x		NoF1-060	37906 3	8382	477	reverse
Non-functional Serine Recombinase (Con-F16L)	NoE1-061	MVA-HANP-049	×	NoE1-061	40820	/1521	702	reverse	×		NoE1-061	58680	50300	702	reverse	v		NoE1-061	39397 3	0083	702	reverse
DNA hinding phosphorestain (UD11): arTOB antegonist (Con E17B)	NoF1 062	MVA HAND 050		NoF1-001	41504	41000	200	feeward			NoF1-001	50005	50350	200	feeward			NoT1-001	2014C 2	0451	200 (	feeward
DNA-binding pilosphopioleui (VF11), infOK anagonist (Cop-F17K)	N0F1-002	WVA-HAINF-030	x	N0F1-062	41564	41889	300	TOrward	x		NOF 1-062	59455	59758	300	TORWARD	x		NOF1-062	39140 3	9451	300 1	Torwaru
Poly (A) polymerase catalytic subunit (VP55) (Cop-EIL)	NoF1-063	MVA-HANP-051	x	NOF1-063	41886	43325	1440	reverse	х		NOF1-063	59755	61194	1440	reverse	x		NOF1-063	39448 4	088/ 1	.440 r	reverse
IEV morphogenesis (Cop-E2L)	NoF1-064	MVA-HANP-052	х	NoF1-064	43322	45535	2214	reverse	х		NoF1-064	61191	63404	2214	reverse	х		NoF1-064	40884 4	3097 2	.214 r	reverse
dsRNA-binding protein, IFN resistance PKR inhibitor (Z-DNA binding) (Cop-																			í			
E3L)	NoF1-065	MVA-HANP-053	x	NoF1-065	45666	46238	573	reverse	х		NoF1-065	63535	64107	573	reverse	х		NoF1-065	43228 4	3800	573 /	reverse
RNA polymerase subunit (RPO30) (Con-F4L)	NoF1-066	MVA-HANP-054	x	NoF1-066	46293	47078	786	reverse	x		NoF1-066	64167	64947	786	reverse	×		NoF1-066	43855 4	4640	786	reverse
Virosome component (Con ESB)	NoF1 067	MVA HAND 055	~	NoF1 067	47109	40151	054	forward	~		NoF1 067	65067	66020	054	forward	~		NoE1 067	43033 4	5712	054 (	forward
Vilosone component (Cop-ESK)	NoF1-007	MUA HAND 050	^	N0F1-007	4/156	40131	534	forward	^	1	NUF1-007	03007	00020	334	forward	^		NUF1-007	44700 4	3/13	334 1	TOI Walu
Vinon protein (Cop-E6K)	NoF1-068	MVA-HANP-056	x	NOF1-U68	482/1	49974	1/04	forward	X		N0F1-068	66140	6/843	1704	forward	x		N0F1-068	45833 4	/536 ]	./04 T	forward
Myrstylated protein (Cop-E/R)	NoF1-069	MVA-HANP-057	x	NoF1-069	50036	50533	498	forward	х		NoF1-069	67905	68402	498	forward	х		NoF1-069	47598 4	8095	498 f	forward
ER-localized membrane protein, virion core protein (Cop-E8R)	NoF1-070	MVA-HANP-058	х	NoF1-070	50644	51465	822	forward	х		NoF1-070	68513	69334	822	forward	х		NoF1-070	48206 4	9027	822 f	forward
DNA polymerase (Cop-E9L)	NoF1-071	MVA-HANP-059	x	NoF1-071	51472	54492	3021	reverse	х		NoF1-071	69341	72358	3018	reverse	х		NoF1-071	49034 5	2051 ?	J018 r	reverse
Sulfhydryl oxidase (FAD-linked) (Cop-E10R)	NoF1-072	MVA-HANP-060	x	NoF1-072	54524	54811	288	forward	х		NoF1-072	72390	72677	288	forward	х		NoF1-072	52083 5	2370	288 f	forward
Virion core protein (Con-ELIL)	NoE1-073	MVA-HANP-061	x	NoE1-073	54806	55195	390	reverse	×		NoE1-073	72672	73061	390	reverse	Y		NoF1-073	52365 5	2754	390	reverse
······································																						
Membrane protein (Cop-O1L)	NoF1-074	MVA-HANP-062	x	NoF1-074	55182	57182	2001	reverse	X		NoF1-074	73048	75048	2001	reverse	х		NoF1-074	52741 5	4741 2	.001 r	reverse
		MVA-HANP-063																	í I			
Glutaredoxin 1 (Cop-O2L)	NoF1-075	MVA-HANP-064	x	NoF1-075	57230	57556	327	reverse	х		NoF1-075	75096	75422	327	reverse	х		NoF1-075	54789 5	5115	327 /	reverse
Virus entryfusion complex component (Con-O3L)	NoF1-076	MVA-HANP-065	x	NoE1-076	57580	57687	108	reverse	×		NoF1-076	75446	75553	108	reverse		x	MVA-HANP-065	55139 5	5246	108	reverse
DNA binding core protein (Con III.)	NoF1 077	MVA HAND 066	~	NoF1 073	57300	57007	020	reverse	~		NoF1 077	70000	76506	020	rovorco		~	MAYA HAND OCC	EE261 E	6100	020	rovorco
DNA-binning core protein (Cop-112)	NoF1-077	MUA HAND 007	^	N0F1-077	50647	50000	335	Teverse	^		NUF1-077	75500	70300	335	reverse		^	NIVA-HAINF-000	55201 5	0199	222	leverse
IN V memorane protein (Cop-12L)	NoF1-078	MVA-HANP-00/	x	N0F1-0/8	58647	58868	222	reverse	x		N0F1-078	/6513	/6/34	222	reverse		x	WVA-HANP-067	56206 5	5427	222 1	reverse
ssDNA-binding phosphoprotein (Cop-I3L)	NoF1-079	MVA-HANP-068	x	NoF1-079	58869	59678	810	reverse	х		NoF1-079	76735	77544	810	reverse		х	MVA-HANP-068	56428 5	7237	810 r	reverse
Ribonucleotide reductase large subunit (Cop-I4L)	NoF1-080	MVA-HANP-069	x	NoF1-080	59761	62076	2316	reverse	х		NoF1-080	77627	79942	2316	reverse	х		NoF1-080	57320 5	9635 2	:316 r	reverse
IMV protein VP13 (Cop-I5L)	NoF1-081	MVA-HANP-070	x	NoF1-081	62103	62342	240	reverse	х		NoF1-081	79969	80208	240	reverse	х		NoF1-081	59662 5	9901	240 1	reverse
Telomere-binding protein (Con-I6L)	NoF1-082	MVA-HANP-071	×	NoF1-082	62361	63509	1149	reverse	x		NoF1-082	80227	81375	1149	reverse	x		NoF1-082	59920 6	1068	1149	reverse
Virion core cysteine protesse (Con-I7I.)	NoF1-083	MVA-HANP-072	×	NoE1-083	63502	64773	1272	reverse	 V		NoE1-083	81368	82630	1272	reverse	v		NoE1-083	61061 6		1272	reverse
DNA halianaa DEwil NDU II domnin (Con 19D)	NoE1 084	MVA HAND 072		N=F1 003	64770	cc000	2021	feerend			NoF1 003	02000	04075	2021	facuard			NoF1 003	(22220 (	4200	2021 (	facuard
KNA leikase, DEXH-INFH-II dollalli (Cop-18K)	NOF1-084	MVA-HAINF-075	x	N0F1-084	64779	00809	2031	TOrward	X		NOF1-064	82045	84075	2031	Torwaru	x		NOF1-084	02336 0	4306 2	.031 1	Torwaru
Metalloprotease (Cop-GIL)	NoF1-085	MVA-HANP-0/4	x	N0F1-085	66813	68588	1//6	reverse	х		N0F1-085	84679	86454	1//6	reverse	x		NOF1-085	64372 6	614/ 1	.//6 r	reverse
Entry/fusion complex component (Cop-G3L)	NoF1-086	MVA-HANP-075	x	NoF1-086	68585	68920	336	reverse	х		NoF1-086	86451	86786	336	reverse	х		NoF1-086	66144 6	6479	336 r	reverse
VLTF (late transcription elongation factor) (Cop-G2R)	NoF1-087	MVA-HANP-076	х	NoF1-087	68914	69576	663	forward	х		NoF1-087	86780	87442	663	forward	х		NoF1-087	66473 6	7135	663 f	forward
Glutaredoxin-like protein (Cop-G4L)	NoF1-088	MVA-HANP-077	x	NoF1-088	69546	69920	375	reverse	х		NoF1-088	87412	87786	375	reverse	х		NoF1-088	67105 6	7479	375 1	reverse
FEN1-like nuclease (Cop-G5R)	NoF1-089	MVA-HANP-078	х	NoF1-089	69923	71230	1308	forward	х		NoF1-089	87789	89096	1308	forward	х		NoF1-089	67482 6	.8789 :	1308 f	forward
RNA polymerase subunit (RPO7) (Con-G5.5R)	NoF1-090	MVA-HANP-079	x	NoF1-090	71238	71429	192	forward	×		NoF1-090	89104	89295	192	forward	×		NoF1-090	68797 6	8988	192 #	forward
NI BelP6() superfamily protein (Con C6P)	NoF1 001	MVA HAND 080	~	NoF1 001	71421	71029	409	forward	~		NoF1 001	90207	90704	409	forward	~		NoE1 001	69000 6	0497	409 (	forward
Vision nhoothematain and membranesis (Con C71)	NoF1-071	MUA HAND 001		NoF1-091	71931	71520	450	TOTWARD		+	NoF1-091	05237	00074	450	TOTWARD			Nor1-051	00050 0	05(7)	1110	Torward
Virion prosphoprotein, early morphogenesis (Cop-G/L)	N0F1-092	MVA-HANP-081	x	N0F1-092	/1893	/3008	1116	reverse	X	-	N0F1-092	89759	90874	1116	reverse	x		N0F1-092	69452 /	J567 J	.116 r	reverse
CC_Cop-G ORF B	overlap	-				1		1				1	1					1	$\vdash$	$\rightarrow$	$ \rightarrow$	
VLTF-1 (late transcription factor 1) (Cop-G8R)	NoF1-093	MVA-HANP-082	х	NoF1-093	73039	73821	783	forward	х		NoF1-093	90905	91687	783	forward	х		NoF1-093	70598 7	1380	783 f	forward
Entry/fusion complex component, myristylprotein (Cop-G9R)	NoF1-094	MVA-HANP-083	х	NoF1-094	73841	74863	1023	forward	х		NoF1-094	91707	92729	1023	forward	х		NoF1-094	71400 7	2422 1	.023 f	forward
IMV membrane protein (Cop-L1R)	NoF1-095	MVA-HANP-084	х	NoF1-095	74864	75616	753	forward	х		NoF1-095	92730	93482	753	forward	х		NoF1-095	72423 7	3175	753 f	forward
Viral membrane assembly proteins (VMAP) (Con-L2R)	NoE1-096	MVA-HANP-085	x	NoE1-096	75648	75914	267	forward	×		NoF1-096	93514	93780	267	forward	Y		NoF1-096	73207 7	3473	267 f	forward
Internal virion protein (Con-L3L)	NoF1-097	MVA-HANP-086		NoE1 007	7500/	76056	1052	reverse		1	NoF1-007	92770	94877	1052	reverse	 v		NoF1-007	73463 7	4515	1052	reverse
all DNA his first section (UD0) (Cree L4D)	N-E1.000	MUA HAND 007	^	NOF 1-097	7,5504	70500	1000	fevelse	^		1101 1-057		05662	1003	icveise	^		11011-057	74540 -	1 210		CVCISE
ssjasDNA binding protein (VP8) (Cop-L4R)	N0F1-098	MVA-HANP-087	X	NoF1-098	/6981	///36	/56	torward	x	-	NOF1-098	94847	95602	/56	Torward	х		N0F1-098	/4540 7	5295	/56 f	rorward
Entry and Fusion IMV protein (Cop-L5R)	NoF1-099	MVA-HANP-088	х	NoF1-099	77746	78132	387	forward	х		NoF1-099	95612	95998	387	forward	х		NoF1-099	75305 7	5691	387 f	forward
Virion morph (Cop-J1R)	NoF1-100	MVA-HANP-089	х	NoF1-100	78089	78550	462	forward	х		NoF1-100	95955	96416	462	forward	x		NoF1-100	75648 7	6109	462 f	forward
Thymidine kinase (Cop-J2R)	NoF1-101	MVA-HANP-090	x	NoF1-101	78566	79099	534	forward	x		NoF1-101	96432	96965	534	forward	х		NoF1-101	76125 7	6658	534 f	forward
Poly (A) polymerase small subunit (VP39) (Cop-J3R)	NoF1-102	MVA-HANP-091	х	NoF1-102	79167	80168	1002	forward	х		NoF1-102	97033	98034	1002	forward	х		NoF1-102	76726 7	7727 1	1002 1	forward
RNA polymerase subunit (RPO22) (Con-14R)	NoF1-103	MVA-HANP-002	v	NoF1-102	80083	80640	558	forward	×		NoF1-103	97949	98506	558	forward	×		NoF1-103	77642 7	8199	558 /	forward
IMV membrane protein (Con ISL)	NoE1 104	MVA HAND 002	Û	No.51 103	90701	91102	402	rovorre	Ĵ		NoE1 104	00567	00000	402	roworra	Û		NoE1 104	70760 7	9661	402	roworre
DNA as house a short (COP-33E)	Nor1-104	MUA HAND 004	X	NOF1-104	00/01	01102	402	reverse	×	<u> </u>	NUT1-104	100000	20200	402	reverse	×		NUT1-104	70200 /	0001		revelse
KINA polymerase subunit (RPO14/) (Cop-J6K)	N0F1-105	MVA-HANP-094	X	NoF1-105	81209	85069	3861	forward	X		N0F1-105	99075	102935	3861	Torward	x		N0F1-105	/8/68 8	2628 3	801 f	rorward
Tyr Ser phosphatase, IFN-gamma inhibitor (Cop-H1L)	NoF1-106	MVA-HANP-095	x	NoF1-106	85066	85581	516	reverse	х		NoF1-106	102932	103447	516	reverse	х		NoF1-106	82625 8	3140	516 r	reverse

IMV membrane protein (Cop-H2R)	NoF1-107	MVA-HANP-096	x	NoF1-107	85595	86164	570	forward	х		NoF1-107	103461 104030 570	forward	х		NoF1-107	83154	83723	570 fo	rward
IMV heparin hinding surface protein (Con-H3L)	NoF1-108	MVA-HANP-097	x	NoE1-108	86167	87144	978	reverse	Y		NoF1-108	104033 105010 978	reverse	v		NoE1-108	83726	84703	978 re	verse
PAP04 (PNA pol associa protein) (Con H4L)	NoE1 100	MVA HAND 009	×	NoF1 100	9714E	00523	2200	reverse	*		NoE1 100	105011 107208 2288	roverse	v		NoF1 100	94704	97001	2200 10	vorso
NTTE 4 (A to for assoc protein) (Cop-114L)	Nor1-109	MUA HAND 000		NOF1-109	0/143	05332	2300	leverse			NOF1-109	103011 10/356 2366	( levelse	~		NOF1-109	04704	07007	2300 10	verse
VLIF-4 (late traiscription factor 4) (Cop-H5K)	NOF1-110	MVA-HANF-099	X	NOF1-110	89/18	90338	621	Torward	x		NOF1-110	107584 108204 621	Torward	x		NOF1-110	8/2//	8/89/	021 101	ward
DNA topoisomerase type I (Cop-H6R)	NoF1-111	MVA-HANP-100	X	NOF1-111	90339	91283	945	forward	x		NOF1-111	108205 109149 945	forward	x		NOF1-111	87898	88842	945 for	rward
CPV-B-116	overlap	-																		
Viral membrane assembly proteins (VMAP) (Cop-H7R)	NoF1-112	MVA-HANP-101	х	NoF1-112	91321	91761	441	forward	х		NoF1-112	109187 109627 441	forward	х		NoF1-112	88880	89320	441 for	rward
mRNA capping enzyme large subunit (Cop-D1R)	NoF1-113	MVA-HANP-102	х	NoF1-113	91805	94339	2535	forward	х		NoF1-113	109671 112205 2535	forward	х		NoF1-113	89364	91898	2535 for	rward
Virion core (Cop-D2L)	NoF1-114	MVA-HANP-103	х	NoF1-114	94298	94738	441	reverse	х		NoF1-114	112164 112604 441	reverse		х	MVA-HANP-103	91857	92297	441 re <sup>v</sup>	verse
Virion core (Cop-D3R)	NoF1-115	MVA-HANP-104	x	NoF1-115	94731	95444	714	forward	х		NoF1-115	112597 113310 714	forward		х	MVA-HANP-104	92290	92991	702 for	rward
Uracil-DNA glycosylase, DNA polymerase processi vity factor (Cop-D4R)	NoF1-116	MVA-HANP-105	x	NoF1-116	95444	96100	657	forward	х		NoF1-116	113310 113966 657	forward		х	MVA-HANP-105	92991	93647	657 for	rward
NTPase, DNA primase (Cop-D5R)	NoF1-117	MVA-HANP-106	x	NoF1-117	96132	98489	2358	forward	х		NoF1-117	113998 116355 2358	forward		х	MVA-HANP-106	93679	96036	2358 for	rward
Morphogenesis, VETF-s (early transcription fact or small) (Cop-D6R)	N=E1 119	MUA HAND 107		N-51 110	00520	100443	1014	6			N-51 110	11/200 110200 1014	6			A0/A UAND 107	00077	07000	1014 6-	
	NOF1-118	MVA-HANF-10/	X	NOF1-118	98530	100443	1914	Torward	x		NOF1-118	110390 118309 1914	Torward		x	IVIVA-HAINP-107	90077	97990	1914 101	ward
KNA polymerase subunit (RPO18) (Cop-D/R)	NoF1-119	MVA-HANP-108	x	NoF1-119	100470	100955	486	forward	х		NoF1-119	118336 118821 486	forward		х	MVA-HANP-108	98017	98502	486 for	rward
Carbonic anhydrase, GAG-binding IMV membrane protein (Cop-D8L)	N. EL 100	NO																		
	NoF1-120	MVA-HANP-109	X	NoF1-120	100918	101832	915	reverse	x		NoF1-120	118/84 119698 915	reverse		х	MVA-HANP-109	98465	99379	915 rev	verse
mRNA decapping enzyme (Cop-D9R)	NoF1-121	MVA-HANP-110	x	NoF1-121	101874	102515	642	forward	х		NoF1-121	119740 120381 642	forward		х	MVA-HANP-110	99421	100062	642 for	rward
mRNA decapping enzyme (Cop-D10R)	NoF1-122	MVA-HANP-111	х	NoF1-122	102512	103258	747	forward	х		NoF1-122	120378 121124 747	forward		х	MVA-HANP-111	100059	100805	747 for	rward
ATPase, NPH1 (Cop-D11L)	NoF1-123	MVA-HANP-112	x	NoF1-123	103259	105154	1896	reverse	х		NoF1-123	121125 123020 1896	reverse		х	MVA-HANP-112	100806	102701	1896 re <sup>v</sup>	verse
mRNA capping enzyme small subunit (Cop-D12L)	NoF1-124	MVA-HANP-113	x	NoF1-124	105188	106051	864	reverse	x		NoF1-124	123054 123917 864	reverse		х	MVA-HANP-113	102736	103599	864 re <sup>,</sup>	verse
VV_Tan-unkown-16	overlap	-																		
Trimeric virion coat protein (rifampicin res) ( Cop-D13L)	NoF1-125	MVA-HANP-114	x	NoF1-125	106082	107737	1656	reverse	х		NoF1-125	123948 125603 1656	reverse		x	MVA-HANP-114	103630	105285	1656 re	verse
VLTF-2 (late transcription factor 2) (Cop-A1L)	NoF1-126	MVA-HANP-115	x	NoF1-126	107761	108213	453	reverse	х		NoF1-126	125627 126079 453	reverse		х	MVA-HANP-115	105309	105761	453 re <sup>-</sup>	verse
VLTF-3 (late transcription factor 3) (Cop-A2L)	NoF1-127	MVA-HANP-116	x	NoF1-127	108234	108908	675	reverse	x		NoE1-127	126100 126774 675	reverse		x	MVA-HANP-116	105782	106456	675 re	verse
S-S bond formation nathway protein (Con-A2 5L)	NoF1-128	MVA-HANP-117	r i	NoF1-129	108905	109138	234	reverse	Ŷ		NoF1-129	126771 127004 224	reverse		× ×	MVA-HANP-117	106452	106682	231 10	verse
P4b program (Cop. A21.)	NoE1 120	MVA LIAND 110		NoE1 120	100505	111007	1025	reverse	×		NoE1 120	127010 129052 1025	revelse		×	MALA HAND 110	106600	109622	1025	verse
P40 precursor (Cop-ASL)	NOF1-129	MUA-HAND 110	X	NOF1-129	109155	111087	1935	reverse	x		NOF1-129	12/019 128953 1955	reverse		x	IVIVA-HAINP-118	100098	108032	1935 161	verse
59KDa vinon core protein (Cop-A4L)	NoF1-130	MVA-HANP-119	X	N0F1-130	111140	111994	855	reverse	x		N0F1-130	129006 129887 882	reverse		x	MVA-HANP-119	108685	109503	819 rev	verse
RNA polymerase subunit (RPO19) (Cop-A5R)	NoF1-131	MVA-HANP-120	х	NOF1-131	112032	112526	495	forward	х		NOF1-131	129925 130419 495	forward		х	MVA-HANP-120	109541	110035	495 for	rward
Viral membrane assembly proteins (VMAP) core protein (Con-A6L)																				
valu nenovale assentsly proteins (vini ii ); core protein (cop viols)	NoF1-132	MVA-HANP-121	х	NoF1-132	112523	113641	1119	reverse	х		NoF1-132	130416 131534 1119	reverse		х	MVA-HANP-121	110032	111150	1119 rev	verse
VETF-L (early transcription factor large) (Cop- A7L)	NoF1-133	MVA-HANP-122	x	NoF1-133	113665	115797	2133	reverse	х		NoF1-133	131558 133690 2133	reverse		х	MVA-HANP-122	111174	113306	2133 re <sup>1</sup>	verse
VITF-3 34kda subunit (Cop-A8R)	NoF1-134	MVA-HANP-123	x	NoF1-134	115851	116717	867	forward	х		NoF1-134	133744 134610 867	forward		х	MVA-HANP-123	113360	114226	867 for	rward
Viral membrane associated, early morphogenesis protein (Cop-A9L)	NoF1-135	MVA-HANP-124	x	NoF1-135	116710	117057	348	reverse	х		NoF1-135	134603 134950 348	reverse		х	MVA-HANP-124	114219	114503	285 re'	verse
P4a precursor (Con-A10L)	NoF1-136	MVA-HANP-125	x	NoF1-136	117058	119739	2682	reverse	x		NoE1-136	134951 137632 2682	reverse		x	MVA-HANP-125	114504	117179	2676 re <sup>.</sup>	verse
Viral membrane assembly proteins (VMAP) (Con-A1 1R)	NoF1-137	MVA-HANP-126	× V	NoF1-137	119754	120710	957	forward	Y		NoF1-137	137647 138603 957	forward		Y	MVA-HANP-126	117194	118150	957 for	nward
Virian norm and chausen processing protein (Cop. A121)	NoE1 129	MVA HAND 127	~	NoE1 139	120712	121200	537	rowara	~		NoE1 139	129605 120192 570	rovorco		~	M0/A HAND 127	110153	110715	E64 ro	warra
MV membrane protein virian maturation (Cop A12L)	NoF1 120	MVA HAND 129	X	NoF1-138	120712	121250	3/3	reverse	×		NoF1-138	120207 120410 212	reverse		×	MUA HAND 122	110132	110/13	212 ro	verse
INV membrane protein, virion maturation (Cop-ATSL)	NOF1-139	MVA-HANF-128	X	NOF1-139	121314	121520	213	reverse	x		NOF1-139	139207 139419 213	reverse		x	IVIVA-HAINP-128	118/39	118951	213 16	verse
Essential IMV membrane protein (Cop-A14L)	NoF1-140	MVA-HANP-129	х	NoF1-140	121634	121906	273	reverse	х		NOF1-140	139527 139799 273	reverse		х	MVA-HANP-129	119059	119331	273 rev	verse
Non-essential IMV membrane protein (Cop-A14.5L)	NoF1-141	MVA-HANP-130	X	NOF1-141	121923	122084	162	reverse	x		NOF1-141	139816 139977 162	reverse		х	MVA-HANP-130	119348	119509	162 rev	verse
Core protein (Cop-A15L)	NoF1-142	MVA-HANP-131	х	NoF1-142	122074	122358	285	reverse	х		NoF1-142	139967 140251 285	reverse		х	MVA-HANP-131	119499	119783	285 rev	verse
Myristylated protein, essential for entry/fusion (Cop-A16L)	NoF1-143	MVA-HANP-132	x	NoF1-143	122342	123475	1134	reverse	х		NoF1-143	140235 141368 1134	reverse		х	MVA-HANP-132	119767	120900	1134 rev	verse
IMV membrane protein (Cop-A17L)	NoF1-144	MVA-HANP-133	х	NoF1-144	123478	124086	609	reverse	х		NoF1-144	141371 141979 609	reverse		х	MVA-HANP-133	120903	121514	612 rev	verse
DNA helicase, transcript release factor (Cop-A18R)	NoF1-145	MVA-HANP-134	x	NoF1-145	124101	125582	1482	forward	х		NoF1-145	141994 143475 1482	forward		х	MVA-HANP-134	121529	123010	1482 for	rward
Zinc finger-like protein (Cop-A19L)	NoF1-146	MVA-HANP-135	x	NoF1-146	125563	125796	234	reverse	х		NoF1-146	143456 143689 234	reverse		х	MVA-HANP-135	122991	123224	234 re'	verse
IMV membrane protein, entry/fusion complex component (Cop-A21L)	NoE1 147	MVA HAND 126	~	NoE1 147	125707	126150	254	rovorco	~		NoE1 147	142600 144042 254	rovorco			MOVA HAND 126	122225	122570	254 10	vorco
DNA polymprose processingly factor (Cop. A20P)	NoE1 149	MVA HAND 127		NoF1-14/	125/5/	120130	1201	forward	~		NoF1-147	144042 145222 1204	forward		*	MALA HAND 127	1225223	124957	1201 4-	verse nuard
Holliday imption resolutes (Con A22D)	NoE1 140	MUA LIAND 120		NoF1 148	120149	127022	1201	forward	×		NoF1-148	145252 145045 564	forward		x	NUVA-MAINP-13/	124707	125250	1201 10r	walu
Tiomaay junction resolvase (COp-A22R)	NOF1-149	MUA HAND 120	X	NOF1-149	12/309	12/922	204	rorward	x		NOF1-149	143232 143813 364	forward		x	IVIVA-MAINP-138	124/8/	120300	304 ror	ward
VIIF-3 45kda subunit (Cop-A23R)	NoF1-150	MVA-HANP-139	х	NoF1-150	12/942	129090	1149	forward	x		NoF1-150	145835 146983 1149	forward		х	MVA-HANP-139	125370	126519	1150 for	rward
KINA polymerase subunit (RPO132) (Cop-A24R)	NoF1-151	MVA-HANP-140	x	NOF1-151	129087	132581	3495	forward	x		NOF1-151	146980 150474 3495	torward		х	IVIVA-HANP-140	126541	130011	34/1 for	rward
A-type inclusion protein (Cop-A25L)	NoF1-152	MVA-HANP-141	х	NoF1-152	132559	136335	3777	reverse	х		NoF1-152	150452 154228 3777	reverse		х	MVA-HANP-141	130016	130213	198 re <sup>v</sup>	verse
Unknown (CPV-B-160)	overlap	-																		
P4c precursor (Con-A26L)	NoF1-153	MVA-HANP-142 f	x	NoE1-153	136381	137949	1569	reverse	Y		NoF1-153	154274 155842 1569	reverse		Y	MVA-HANP-142	130799	131491	693 re	verse
IMV surface protein fiscion protein (Con. A271)	NoF1-153	MVA-HANP-1/3	x	NoE1-154	128001	129222	333	reverse	v		NoE1-154	155804 156226 222	reverse		×	MV/A-HAND-1/3	1215/1	121972	222 ro	verse
IMV MD/Vine ontry (Con A291)	NoE1 155	MVA HAND 144	X	NoF1-134	120224	120774	333	reverse	×		NoF1-134	153034 130220 333	reverse		×	MUA-HAND 144	121074	122214	441 ro	verse
IN V MP VIUS entry (Cop-A28L)	NOF1-133	MIVA-HANF-144	X	NOF1-155	158554	158/74	441	reverse	x		NOF1-155	150227 150007 441	reverse		x	IVIVA-HAINP-144	1318/4	132314	441 16	verse
KNA polymerase subunit (RPO35) (Cop-A29L)	NoF1-156	MVA-HANP-145	х	NOF1-156	138775	139692	918	reverse	x		NOF1-156	156668 157585 918	reverse		х	MVA-HANP-145	132315	133232	918 rev	verse
IMV protein (Cop-A30L)	NoF1-157	MVA-HANP-146	x	NoF1-157	139655	139885	231	reverse	х		NoF1-157	157548 157778 231	reverse		х	MVA-HANP-146	133195	133428	234 rev	verse
Viral membrane assembly proteins (VMAP) (Cop-A30.5L)	NoF1-158	MVA-HANP-147	x	NoF1-158	139918	140046	129	reverse	х		NoF1-158	157811 157939 129	reverse		х	MVA-HANP-147	133461	133589	129 rev	verse
Hypothetical protein (Cop-A31R)	NoF1-159	MVA-HANP-148	x	NoF1-159	140045	140458	414	forward	х		NoF1-159	157938 158351 414	forward		х	MVA-HANP-148	133588	133965	378 for	rward
ATPase DNA packaging protein (Cop-A32L)	NoF1-160	MVA-HANP-149	x	NoF1-160	140428	141237	810	reverse	x		NoF1-160	158321 159130 810	reverse		x	MVA-HANP-149	133935	134744	810 re <sup>v</sup>	verse
EEV																				
EEV memorane phosphogrycoprotein, C-type iecun - ike domain (Cop-A33R)	NoF1-161	MVA-HANP-150	x	NoF1-161	141355	141930	576	forward	x		NoF1-161	159248 159823 576	forward		х	MVA-HANP-150	134862	135419	558 for	rward
C-type lectin-like IEV/EEV glycoprotein (Cop-A34R)	NoF1-162	MVA-HANP-151	x	NoF1-162	141954	142460	507	forward	x		NoF1-167	159847 160353 507	forward		х	MVA-HANP-151	135443	135949	507 for	rward
VV-Con-A ORF M	overlan	-																	101	
MHC class II antigen presentation inhibitor (Cop. A35R)	NoF1-163	MVA-HANP-157	x	NoF1-163	142506	143036	531	forward	x		NoE1-163	160399 160929 531	forward		v	MVA-HANP-157	135992	136523	531 fo	rward
IEV transmembrane phosphonrotein (Con_A36P)	NoF1-164	MVA-HANP-152	, î	NoE1-164	1/2100	1/12769	669	forward	v		NoE1-164	160993 161643 651	forward		×	MV/A_HAND, 152	136500	137216	627 fo	nward
Hypothetical protein (Con A27D)	NoE1 165	MVA LIAND 154		NoF1 165	143100	143700	702	forward	~	~	NUF1-104	161707 162409 702	forward		*	MALA HAND 154	127200	120074	702 4-	ward
riypouicucal protein (Cop-A5/K)	INOF 1-100	www.a-nAINP-104	×	INOF 1-165	143835	144626	/92	iorward	1	x	IVIVA-RANP-154	101/0/ 102498 /92	iorward		х	IVIVA-HANP-154	13/280	1300/1	/92 TOP	ward

Unknown (Gar-A43R)	NoF1-166		×		NoE1-166	144734	144919	186	forward	1									i	T 7
CD47-like, integral membrane protein (Cop-A38L)	NoF1-167	MVA-HANP-155	×		NoF1-167	144916	145749	834	reverse		×	MVA-HANP-155 162758 163591	834	reverse		×	MVA-HANP-155	138331	139164 834	reverse
CD 17 like, inegat tientstate proteit (Cop 7150D)	11011 107	MULTINE 155	~		11011 107	144510	140070	1010	i cverse		~		034			~		130331	100104 054	i creise
Semaphorin (Cop-A39R)	NoF1-168	MVA-HANP-156	×		NOF1-168	145/65	146976	1212	forward		x	MVA-HANP-156 163608 163881	2/4	orward		x	MVA-HANP-156	139181	139432 252	forward
		MVA-HANP-157									х	MVA-HANP-157 164187 164819	633 1	orward		х	MVA-HANP-157	139738	140370 633	forward
Lectin homolog (Cop-A40R)	NoF1-169	MVA-HANP-158	x		NoF1-169	146998	147480	483	forward		х	MVA-HANP-158 164845 165351	507 1	orward		х	MVA-HANP-158	140396	140902 507	forward
Chemokine binding protein (Cop-A41L)	NoF1-170	MVA-HANP-159	x		NoF1-170	147578	148240	663	reverse		х	MVA-HANP-159 165390 166049	660	reverse		х	MVA-HANP-159	140941	141600 660	reverse
Profilin-like protein, ATI-localized (Cop-A42R)	NoF1-171	MVA-HANP-160	×		NoF1-171	148419	148820	402	forward		х	MVA-HANP-160 166221 166607	387 1	orward		х	MVA-HANP-160	141772	142158 387	forward
Type I membrane glycoprotein (Cop-A43R)	NoF1-172	MVA-HANP-161	x		NoF1-172	148858	149439	582	forward		х	MVA-HANP-161 166645 167217	573 1	orward		х	MVA-HANP-161	142196	142768 573	forward
Hypothetical protein (Cop-A43.5R)	NoF1-173	MVA-HANP-162	×		NoF1-173	149442	149687	246	forward		х	MVA-HANP-162 167225 167461	237 1	orward		х	MVA-HANP-162	142776	143012 237	forward
3 beta-hydroxysteroid dehydrogenase delta 5->4 isomerase (Cop-A44L)	NoF1-174	MVA-HANP-163	x		NoF1-174	149779	150819	1041	reverse		x	MVA-HANP-163 167561 168601	1041	reverse		x	MVA-HANP-163	143112	144152 1041	reverse
Inactive Cu-Zn superoxide dismutase-like virion protein (Cop-A45R)																				
	NoF1-175	MVA-HANP-164	x		NoF1-175	150866	151243	378	forward		х	MVA-HANP-164 168648 169013	366 1	orward		х	MVA-HANP-164	144199	144564 366	forward
IL-1 TLR signaling inhibitor (Cop-A46R)	NoF1-176	MVA-HANP-165	x		NoF1-176	151233	151955	723	forward		х	MVA-HANP-165 169003 169725	723 1	orward		х	MVA-HANP-165	144554	145276 723	forward
Immunoprevalent protein (Cop-A47L)	NoF1-177	MVA-HANP-166	x		NoF1-177	152091	152825	735	reverse		х	MVA-HANP-166 169773 170489	717	reverse		х	MVA-HANP-166	145324	146040 717	reverse
Thymidylate kinase (Cop-A48R)	NoF1-178	MVA-HANP-167	x		NoF1-178	152698	153540	843	forward		х	MVA-HANP-167 170588 171202	615 1	orward		х	MVA-HANP-167	146139	146753 615	forward
Putative phosphotransferase anion transport pro tein (Cop-A49R)	NoE1-179	MVA-HAND-168	,		NoE1-179	152590	154077	190	forward		Ū.	MVA-WAND-169 171226 171714	490	onward		v	M/A-HAND-169	146777	147265 499	forward
ATP-dependent DNA ligase (Con-A50P)	NoF1-180	MVA-HANP-160	×		NoE1-190	15/110	155774	1665	forward		Ŷ	MVA-HANP-160 171220 171714	1650	onward		Ŷ	MVA-HAND-160	140777	149255 1659	forward
Hunothatical protein (Con. A51B)	NoE1 181	MVA HAND 170	~		NoF1 191	155027	156910	084	forward		Ŷ	MVA-HAND 170 173450 17460F	1146	ionward		Ŷ	MUA-HAND 170	140001	150146 1146	forward
Hypothetical protein (Cop-ASTR)	101-1-181	WIVA-HAINT-170	^		NOF1-101	133027	130810	304	TOTWaru			WVA-HANF-170 175450 174555	1140	orwaru			IVIVA-HAINP-170	149001	130140 1140	TOTWalu
Toll/IL-1 receptor-like protein, IL-1, NFkB signalling inhibitor (Cop-A52R)	NoF1-182	-																		
TNF receptor (CrmC) (Cop-A53R)	-	-																	1	1
CPV-B-192	NoF1-183	-																		
BTB Kelch-domain containing protein; CRL complex (Cop-A55R)	NoE1 194																			
Homogenetinin (Con. A56P)	NoE1 195	MUA HAND 171		~	AVA HAND 17	160206	161252	049	forward			NOVA HAND 171 177017 1700C4	049	ionuard		~	MOVA HAND 171	152460	154415 040	forward
nenagguunn (Cop-A56K)	INOF1-185	WIVA-HANP-1/1		x	VIVA-HANP-17	100300	161253	948	forward		x	WVA-HANP-1/1 1//91/ 1/8864	948	orward		x	IVIVA-HAINP-1/1	153468	154415 948	Torward
Guanylate kinase (Cop-A56.5R)	NoF1-186	MVA-HANP-172		х	MVA-HANP-172	161549	161842	294	forward		х	MVA-HANP-172 179160 179453	294 1	orward		х	MVA-HANP-172	154711	155004 294	forward
Ser/Thr Kinase (Cop-B1R)	NoF1-187	MVA-HANP-173		х	MVA-HANP-17	161993	162895	903	forward		х	MVA-HANP-173 179604 180506	903 1	orward		х	MVA-HANP-173	155155	156057 903	forward
		MVA-HANP-174 <sup>f</sup>		x	MVA-HANP-174	163034	163324	291	forward		х	MVA-HANP-174 180645 180935	291	orward		x	MVA-HANP-174	156196	156486 291	forward
Schlafen (Cop-B2R)	NoF1-188	MVA-HANP-175 <sup>f</sup>		x	MVA-HANP-17	163179	163610	432	forward		x	MVA-HANP-175 180790 181221	432	orward		x	MVA-HANP-175	156341	156772 432	forward
		MVA-HANP-176		x	MVA-HANP-176	163807	164346	540	forward		x	MVA-HANP-176 181418 181957	540	orward		x	MVA-HANP-176	156969	157508 540	forward
		MVA-HAND-177 f		v	M/A-HAND-17	164572	165106	524	forward		v	MVA-HAND-177 192194 192717	524	onward		v	M/A-HAND-177	157725	159269 524	forward
Ankyrin (Cop-B4R)	N E1 100	MUA-HAND 170 f		^	VIVA-HANT-17	104575	105100	5394	forward		^	WVA-IANT-177 102104 102717	1000			^	WWA-HANF-177	157755	150200 1000	roi wai u
	NoF1-189	MVA-HANP-1/8		x	MVA-HANP-178	164997	166226	1230	forward		x	MVA-HANP-178 182608 183837	1230	orward		x	MVA-HANP-178	158159	159388 1230	forward
EEV type-1 membrane glycoprotein, protective an tigen (Cop-B5R)	NoF1-190	MVA-HANP-179		x	MVA-HANP-17	166314	167267	954	forward		x	MVA-HANP-179 183925 184878	954	orward		х	MVA-HANP-179	159476	160429 954	forward
Ankyrin-like protein (Cop-B6R)	NoF1-191	MVA-HANP-180		x	MVA-HANP-180	167364	167885	522	forward		x	MVA-HANP-180 184975 185496	522 1	orward	x		NoF1-191	160526	160825 300	forward
Virulence, ER resident (Cop-B/R)	NoF1-192	MVA-HANP-181		x	MVA-HANP-18	167923	168456	534	forward		x	MVA-HANP-181 185534 186067	534 1	orward		x	MVA-HANP-181	161099	161629 531	forward
Soluble IFN-g receptor-like protein (Cop-B8R)	NoF1-193	MVA-HANP-182 <sup>r</sup>		х	MVA-HANP-18	168511	169191	681	forward		х	MVA-HANP-182 186122 186802	681 1	orward	х		NoF1-193	161681	162403 723	forward
ER-localized apoptosis regulator (Cop-B9R)	NoF1-194	MVA-HANP-183		х	MVA-HANP-18	169348	169566	219	forward		х	MVA-HANP-183 186959 187177	219	orward		х	MVA-HANP-183	162560	162778 219	forward
Kelch-like protein (Cop-B10R)	NoF1-195	MVA-HANP-184		х	VIVA-HANP-18	169529	170005	477	forward		х	MVA-HANP-184 187140 187616	477 1	orward		х	MVA-HANP-184	162741	163217 477	forward
Hypothetical protein (Cop-B11R)	NoF1-196	MVA-HANP-185		х	MVA-HANP-18	170077	170301	225	forward		х	MVA-HANP-185 187688 187912	225 1	orward		x	MVA-HANP-185	163289	163513 225	forward
Ser Thr Kinase (Cop-B12R)	NoF1-197	MVA-HANP-186		х	MVA-HANP-18	170368	171219	852	forward		х	MVA-HANP-186 187979 188830	852 1	orward		х	MVA-HANP-186	163580	164431 852	forward
	N. 54 400	MVA-HANP-187 <sup>f</sup>		x	MVA-HANP-18	171327	171677	351	forward		x	MVA-HANP-187 188938 189288	351	orward		x	MVA-HANP-187	164539	164889 351	forward
Serpin 1,2,3 (Cop-K2L)	NoF1-198	MVA-HANP-188 f		×	MVA-HANP-18	171652	172317	666	forward		×	MVA-HANP-188 189263 189931	669	orward		×	MVA-HANP-188	164864	165532 669	forward
Hypothetical protein (Cop. C16L)	NoF1-199	MVA-HANP-189		Ŷ	MVA-HANP-18	172448	172879	432	forward		v v	MVA-HANP-189 190007 190438	432	onward		v	MVA-HANP-189	165608	166039 432	forward
II =1 beta receptor (Con-B16R)	NoF1-200	MVA-HANP-190		Ŷ	MVA-HANP-19	172963	173943	981	forward		v v	MVA-HANP-190 190522 191502	981	onward		v v	MVA-HANP-190	166123	167103 981	forward
II - 1 beta inhibitar (Con-B17I.)	NoF1-200	MVA-HANP-191		v	M/A-HANR-19	172090	175011	1022	reverse		~	MVA-HAND-191 191548 192570	1022	reverse		v	M/A-HANR-191	167149	169171 1022	reverse
Ankyrin (Con-B18R)	NoF1-202	MVA-HANP-192		Ŷ	MVA-HANP-19	175151	176875	1725	forward		Ŷ	MVA-HANP-192 192710 194434	1725	onward		Ŷ	MVA-HANP-191	168311	170035 1725	forward
IEN alshalhata maantor akaonrotain (Con P10P)	N F1 202	MULTINE 102 f		^		175151	170075	202	for ward		~		202			~		100511	170000 7720	10.101
	NoF1-203	MVA-HANP-195		x	MVA-HANP-19	176941	177645	705	forward		x	MVA-HANP-193 194500 195204	705	orward		x	MVA-HANP-193	1/0101	1/0805 /05	forward
Ankynii (Cop-B20k)	NOF1-204	-																		-
CPV-B-214	overlap	-																		-
Keich-like protein (EVM-167)	NOF1-203	-																		-
Hypothetical protein (Cop-C11.5R)	- N. EL 2005	-																		
Serpin 1,2,3 (Cop-K2L)	NoF1-206	-																	·	-
Hypothetical protein (Cop-C14L)	NoF1-20/	-																	I	
Surface glycoprotein	NoF1-208	MVA-HANP-194		х	MVA-HANP-19	178144	178356	213	forward		х	MVA-HANP-194 195703 195915	213 1	orward		х	MVA-HANP-194	171304	171516 213	forward
Ankyrin (Cop-C19L)	NoF1-209	-																		
TNF receptor (CrmD)	NoF1-210	-																		
Hypothetical protein (Cop-C16L)	NoF1-211	MVA-HANP-195	x		NoF1-211	178989	179450	462	forward	х		NoF1-211 196548 197009	462 1	orward	х		NoF1-211	172149	172610 462	forward
		MVA-HANP-196 <sup>f</sup>	×		NoF1-212	179665	181671	2007	forward	x		NoF1-212 197222 199228	2007	orward		x	MVA-HANP-196	172678	173379 702	forward
Ankynn (Cop-C1/L)	NOF1-212	MVA-HANP-197 f														×	MVA-HANP-197	173456	173764 309	forward
Ankyrin-like repeat containing protein	NoF1-213	-	x		NoF1-213	181711	181800	90	forward	x		NoF1-213 199268 199357	90	orward	1	^				lormalu
Ankurin (Con-C191)	N-E1 214	MUA HAND 100 f			N-54 245	101/11	102000	1707	fammand		l	N-51 214 400420 201205	4707		1			474452	474000 501	6
This corperty (Corp. C221)	NOF1-214 N=E1-215	wivA-пАNF-198	X		NOF1-214	181882	183048	1/0/	forward	x		NOF1-214 199439 201205	1/0/	orward		x	IVIVA-MAINP-198	1/4452	1/4982 531	rorward
TNF receptor (CrmB) (Cop-C22L)	N0F1-215	-	×		NOF1-215	183726	184799	10/4	forward	×	-	NOF1-215 201283 202356	10/4	orward						+
Cnemokine binding protein (Cop-C23L)	NoF1-216	MVA-HANP-199 <sup>1</sup>	x		NoF1-216	184873	185610	738	forward	x		NoF1-216 202430 203167	738	orward		х	MVA-HANP-199	175414	175824 411	forward
CPV-B-002	NoF1-217	-	х		NoF1-217	185639	185866	228	forward	х		NoF1-217 203196 203423	228	orward	I					1

f = CDS was fragmented, disrupted or partially deleted

	Emoviment		RE	PP4	Sim	plot	Man	ually
	Experiment	Virus	Core	ITR	Core	ITR	Core	ITR
Coinfection	CPXV-NOF1/ MVA-HANP	R1	10	-	14	-	14	-
	Sumarinfaction 1 (CDVV NOF1/MVA HAND 4b)	R2	20	-	20	-	20	-
	Supermection 1 (CFXV-NOF1/ WIVA-HANT 40)	R3	0	-	2	-	2	-
		R4	7	1	9	3	9	3
	Superinfection 2 (MVA-HANP/ CPXV-NOF1-4h)	R5	6	-	6	-	6	-
		R6	4	-	8	-	8	-
		R7	8	2	14	2	14	2
		R8	12	-	22	-	22	-
	Superinfection 3 (CPXV-NOF1/MVA-HANP-6h)	R9	-	-	-	-	-	-
		R10	6	-	10	-	12	-
		R11	2	-	4	2	8	2
	Superinfection 4 (MVA-HANP/ CPXV-NOF1-6h)	R12	6	-	9	1	11	1

Supplementary Table 3. Number of recombination breakpoints along the genome of progeny viruses.

**Supplementary Table 4**. Number of CDS derived from the parental viruses (CPXV-No-F1 and MVA-HANP) in the progeny viruses.

	Experiment	Virus	CDS from	CDS from
		v ii us	CPXV-NoF1	MVA-HANP
Coinfection	CPXV-NOF1/ MVA-HANP	R1	173	43
	Sumarinfaction 1 (CDVV NOE1/MVA HAND 4b)	R2	104	116
	Supermection 1 (CFXV-NOF1/ WIVA-HAINF 41)	R3	217	0
		R4	159	51
	Superinfection 2 (MVA-HANP/ CPXV-NOF1-4h)	R5	199	15
		R6	179	38
Superinfection		R7	168	45
		R8	153	65
	Superinfection 3 (CPXV-NOF1/ MVA-HANP-6h)	R9	217	0
		R10	173	25
		R11	171	41
	Superinfection 4 (MVA-HANP/ CPXV-NOF1-6h)	R12	83	114

\*R3 did not contain MVA-HANP CDS but it had a small recombination region from MVA-HANP

Supplementary Table 5. List of single-nucleotide polymorphisms (SNP), insertions and deletions detected in the progeny viruses

	Experiment	Virus	Туре	Progeny Genome	Parental genome	Location (bp)	Length (bp)	CDS
Coinfoction	ODVX NOE1/MXA HAND	D1	deletion	HA transgene, partial NP transgene	HA-NP transgenes	14748-31510	3161	-
Connection	CPXV-NOF1/ MVA-HANP	KI	SNP	A	С	205360	1	NoF1-208 (CPXV-Br219)
		R2	SNP	G	Т	138235	1	NoF1-138 (CPXV-Br144)
	Superinfection 1 (CPXV-NOF1/ MVA-HANP 4h)	R3	insertion	ATC	-	154305-154307	3	NoF1-153 (VACV-Cop A26L)
			insertion	GT	-	7446-7447	2	Intergenic region
		R4	deletion	-	Т	172281	1	Intergenic region
	Sumarinfaction 2 (MAVA HAND/ CDVM NOE1 4k)		insertion	CA	-	193258-193259	2	Intergenic region
	Superimection 2 (IVI VA-HAINP/ CPAV-NOF1-41)	R5	deletion	-	Т	176169	1	Intergenic region
		Dć	insertion	GT	-	7656-7657	2	Intergenic region
		ко	insertion	AC	-	210478-210479	2	Intergenic region
		R7	deletion	-	Т	181562	1	Intergenic region
		<b>R8</b>	deletion	-	Т	172509	1	Intergenic region
			insertion	AGTG	-	7172-7175	4	Intergenic region
Superinfection		<b>P</b> 0	SNP	А	С	8097	1	NoF1-008 (VACV-Cop N2L)
Supermeetion	Sumarinfaction 3 (CDVV NOF1/MVA HAND 6b)	K)	SNP	А	G	42301	1	NoF1-040 (VACV-Cop K2L)
			insertion	CTCA	-	213994-213997	4	Intergenic region
		R10	deletion	-	long	13660	16761	NoF1-015 - NoF1-028 (CPXV-Br016 - CPXV- Br029)
			deletion	-	GGTGTAAGAATAGGAGCAGTACTACTA	111707	27	VACV-Cop A4L
			deletion	-	Т	158466	1	Intergenic region
		R11	deletion	-	Т	176071	1	Intergenic region
Su	Superinfection 4 (MVA-HANP/ CPXV-NOF1-6h)	R12	deletion	-	long	13654	16761	NoF1-015 - NoF1-028 (CPXV-Br016 - CPXV- Br029)
			insertion	А	-	126518	1	Intergenic region
			deletion	-	Т	151622	1	Intergenic region



**Fig S1.** Comparison of the double expression cassette in MVA, MVA-HANP and incomplete MVA-HANP. Green blocks represent the influenza virus *hemagglutinin* (*HA*) and *nucleoprotein* (*NP*) transgenes. Red blocks represent the coding sequences (CDS) from MVA-HANP.

