A novel Asfarvirus-like virus identified as a potential cause of mass mortality of abalone

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Japan Fisheries Research and Education Agency, National Research Institute of Aquaculture, Research Center for Fish Diseases, Minami-Ise, Mie 516-0193, Japan Tel.: +81-599-66-1830 Fax: +81-599-66-1962 E-mail: matsuym@fra.affrc.go.jp Supplemental data 1. Negative staining and TEM observation of the semi-purified fraction.

Semi-purified fractions were prepared from cryopreserved (-80 °C) healthy and diseased black abalone collected from Owase and Omaezaki, respectively, in 2015. Approximately 0.1 g of soft-body tissues, excluding the midgut, were recovered from each abalone. Tissues were minced with a razor, combined with 10 volumes of autoclaved seawater, and crushed with a Potter-type glass homogenizer. The crushed samples were centrifuged at 15,000 × g for 10 min at 4 °C, and the supernatants were passed through a 0.22-µm syringe filter (Millipore). The filtrates were diluted with autoclaved seawater and centrifuged at 150,000 × g for 1 h at 4 °C to sediment the particles. Supernatants were decanted and the resulting pellets were resuspended in a small amount of autoclaved seawater. Resuspended samples were divided for negative staining and TEM observation.

For negative staining observation, samples were absorbed to formvar film-coated grids and stained with 2% phosphor tungstic acid solution. The grids were observed using a transmission electron microscopy (JEOL1400 plus, Jeol).

For TEM observation, resuspended samples were sandwiched between copper disks and frozen in liquid propane at -175 °C. Frozen samples were submerged in 2% glutaraldehyde, 1% tannic acid in ethanol, and 2% distilled water at -80 °C for 2 days. The samples were dehydrated through ethanol and infiltrated with propylene oxide (PO) and were put into a 70:30 mixture of PO and resin (Quetol-812, Nisshin EM Co.) for 1 h. The samples were transferred to fresh 100% resin and polymerized. Thin sections (70

nm) were prepared and stained with 2% uranyl acetate and examined using the JEOL1400 plus transmission electron microscope.

Fig. S2 shows an example of electron microscopic (EM) observation. In images obtained from both analyses, spheroids of various sizes were found in the fractions prepared from both healthy and diseased abalone. AbALV was difficult to identify from observed particle morphology.

Electrophoresis images of PCR products generated by primers designed with primer3











Supplemental Fig 1

Supplemental Figure 1. Electrophoresis images of PCR and RT-PCR products for pooled DNA/RNA samples. The squares and numbers indicate electrophoresis images of target genes corresponding to each number. PCR products from healthy abalone isolated in 2015 and 2016, diseased black abalone *(Haliotis discus discus)*, and diseased giant abalone *(Haliotis madaka)* (N=6 per group) are shown. M indicates the DNA molecular-weight size marker (2,000, 1,000, 500, and 100 bp for PCR; 600, 500, 400, 300, 200, and 100 bp for RT-PCR).



Supplemental Figure 2.

Example of electron microscopic (EM) observation. In images obtained from negative staining and TEM analyses, spheroids of various sizes were found in the fractions prepared from both healthy and diseased abalone.



Supplemental Figure 3. Full-length electrophoresis images for analyses described in Figure 2.

(A) Electrophoresis images for Scaffolds 1, 4, 7, and 8. Because Scaffold 1 had many false-negative results among diseased abalone, PCR and electrophoresis were repeated,

and the results from the repeated test (B) were described in the main text. (B) Electrophoresis images for Scaffolds 1 and 7. Scaffold 7 electrophoresis images show a weak positive signal from a healthy abalone sample in the 12th well. Thus, results from (A) were described in the main text. (C) Electrophoresis images for Scaffolds 5 and 38. (D) Electrophoresis images for Scaffolds 9, 11, 15, and 53. (E) Electrophoresis images for Scaffolds 66 and 68. (F) Electrophoresis images for Scaffolds 65 and 66. Because the Scaffold 66 PCR product migrated too far, the image shown in (E) was used in the main text. PCR products from healthy abalone in 2015 and 2016, diseased black abalone (*Haliotis discus discus*), and giant abalone (*Haliotis madaka*) (N=6 per group) were electrophoresed, stained with GelGreen, and visualized using an LED transilluminator. The rightmost lane is the DNA molecular-weight size marker (2,000, 1,000, 500, and 100 bp).

Sumplemental Table 1 Primary for DCP and PT DCP based careanin	a of company not	wibby dariwad from a	ntetivo concetivo ocont c	and results of BCP and PT BCP for	nooled DNA complex
Supplemental fable 1. Frinters for FCR* and RT*FCR*based screening	g of sequences pos	ssibly derived from p	utative causative agent, a	and results of FCR and R14 CR for	pooled Divit samples

							Expected	Results of PCR and RT-
Scaffolds	Scaffold length (bp)	Pande mannad	Mean coverage E-primer	sequence(5'.3')	R-primer	Sequence (5'-3')	product size	PCR of pooled DNA sample
Primers	losignod h	Primer	2	sequence(5-5-)	reprinter	Sequence (5-5-)	(0p)	Brochampie
scaffold 0001	49.616	715 710	1 983 E-sc 0001	GCGAAATTCCGATTTTGGGCTGTTCGCCCG	R-sc 0001	TCAAAATGAAGGGTCCTCCTGCCGCCATCG	795	D
scaffold_0002	39,570	1,726,916	6,135 F-sc_0002	AGGCCCGCGATCCCGCCGTGGT	R-sc_0002	CCGCCGCCTTGGCCGCTTGGGGT	1259	N
scaffold_0003	30,917	733,072	3,199 F-sc_0003	TGCCCTTAATTGGGGAGAGAGATGATCCGACACT	R-sc_0003	TCCCCGTTTAGGTTCAGAAGAGCCGTCG	523	N
scaffold_0004	19,721	349,693	2,412 F-sc_0004	CGGGCCCGCGTACCGGAATCGGC	R-sc_0004	TCCGGCCACCCAAAGTCTGCCCA	341	D
scaffold_0005	18,328	316,967	2,355 F-sc_0005	AGTGGGGAAGGGGTGGGGGGCA	R-sc_0005	ACCAGTGAAGGTCAGGCCCGCCGC	669	D
scaffold_0006	15,747	425,616	3,679 F-sc_0006	TCGTCTATTCCAAACCCTGCCCATTGATCTCCT	R-sc_0006	ACCCCAGGAGCTTCAGGTACTACAGCGGCA	538	N
scaffold_0007	14,418	288,679	2,748 F-sc_0007	ACGGGCCAACCGATGGACGGCA	R-sc_0007	GEGGEGGEGGGECACEAACT	990	D
scaffold_0008	9,744	109,705	1,541 F-sc_0008	TCTGTGTCAAATGAGGGGCGTGGAGGCATT	R-sc_0008	ATTGGTGTTATGGGGCCGGCCGACTTCTTT	343	D
scatfold_0009	8,540	126,524	2,030 F-sc_0009	TCTTGGTGCGGGTGGCGGCGA	R-sc_0009	1GGGGGCCCCCTTCGAATTCCC	711	D
scattoid_0010	7,990	111,815	1,935 F-sc_0010	ACAGGGTGGAGCAGGAACTGGTGCTGA	R-sc_0010	TCCACCCCCCAA ATTCAACCCCCCCCT	836	N
scaffold_0012	6.695	68 979	2,768 F-SC_0011	AGGAGCCATGCCACTTGTACAACAACTACTCC	R-sc_0011 R-sc_0012	ACTGCCCCUMMATINAAGCGCGGTTCA	900	N
scaffold 0013	6 183	61.861	1 384 F-sc 0013	AACACCAGCACCAGCTGCAGCAACAG	R-sc_0012	TGATGGCTTTGCTGTGGTAAGGGAGCG	949	N
scaffold 0014	5.566	166.266	4.114 F-sc 0014	ACCCCACCACTATCGGTGAGGACGGA	R-sc 0014	ACACCACCCGGACTTGGAGCAGGAA	607	N
scaffold_0015	5,385	71,380	1,810 F-sc_0015	CCCCATTGTGCCCATGTTTCTACTGCACCA	R-sc_0015	TGTGGCTTTTACAATTGCCGAGGCCGAACAA	1134	D
scaffold_0016	4,538	52,969	1,592 F-sc_0016	TAGCCTTGCTGGTGCTGTGCACTCTGCATT	R-sc_0016	TAACTGCGTTGTTGCGCCCTTAGTGGTGGT	1494	N
scaffold_0017	4,005	219,083	7,536 F-sc_0017	GGAACAGCCCCAACCCCTCCTCTGTCC	R-sc_0017	TCTGCATCTTTAGGTGGAGTTCGTCCGTTGGT	1190	N
scaffold_0020	3,586	140,370	5,376 F-sc_0020	AACGCCGAGCCAACGGACGGAAAACAGTAG	R-sc_0020	TTTCCTCCTTGCGCACTTCCACCTCCTTGG	474	N
scaffold_0021	2,853	57,456	2,662 F-sc_0021	TGTAATACACACAGATCAAGGCTCACCACAGGGT	R-sc_0021	ACGGTTCAAACAGTGAGAGAGGGAAGGGGGTATTCA	1358	N
scaffold_0027	1,538	25,040	2,245 F-sc_0027	TTGCTGTGGACACTCCAGCACGCCCAAATA	R-sc_0027	AGAGGCACCAGCCGGAACAGCAACTGTAAC	488	N
Scaffold_0031	1,444	26,554	2,537 F-sc_0031	AACACCGTTAGCTCATGGAATTGCTCCAAAAACGTA	R-sc_0031	TGCCGGACTTAAAGCCGCATTTGCCTCAGA	589	N
Scatfold_0034	1,382	47,949	4,824 F-sc_0034	GCCCTCAGCGCCAAATAGCAAGCCAAAACC	R-sc_0034	ATGTGGCCTTGGGTGTTGGTGCTGGTGTAA	747	N
scattoid_0036	1,241	13,963	1,566 F-sc_0036	GILLEAREGEI IGAIGACEAREGEERE ICI	R-sc_0036	TOCTOCTA ACCOTA COTTTCCCATCA ATCCA ACCA A	823	N
Scaffold 0050	1,108	46 126	6.583 E-sc 0050	AGOGGAATGTTAGAAGCTGGGGACGGATT	R-sc_0041 R-sc_0050	TECCONNANCE NEET HOTEAN AND AND AND AND AND AND AND AND AND A	148	d
scaffold 0053	912	11 236	1.692 E-sc 0053	ACTGGAGCAGAAGGCTTAAGTTTAAAACATGGCCGA	R-sc 0053	TGCGGCACTTCGTAAAACTTCGCGCATTGA	300	D
Scaffold 0054	911	82.250	12.465 F-sc 0054	GGAGCGGTGAAGGAGTTTGTGATTTGGATGGT	R-sc 0054	CCGGGTTAAGGAGTTGTAGGCGCGGAGAAT	342	N
Scaffold 0059	856	35,258	5,317 F-sc 0059	CACCTCGCGGTGCGTCTTTTAGTTGGTGTA	R-sc 0059	TGCTATCAACATTACCGTCATTTCCCTCACCTCCT	103	N
scaffold_0065	813	38,802	6,577 F-sc_0065	TGTCACTTGCAGGAGGCACAATGAGGGGAA	R-sc_0065	ACACCACCGCGTGATAACCTACCATGT	553	D
Scaffold_0066	806	25,947	4,388 F-sc_0066	ACCAACAAGTGTTTGAACGACTAAGCAAGGCGA	R-sc_0066	ACGAAGTGCAAAAGGCGGGCAAAGTCTAGT	185	D
Scaffold_0068	800	27,063	4,579 F-sc_0068	GAACAGCTGCCTTGCGCCGCTTCTCTCTTA	R-sc_0068	CCCACCGCTTTTCGGCAAACATGATGCGAC	460	D
Scaffold_0076	770	35,673	6,469 F-sc_0076	GCGACGTAGGAGCGATTGCCTATTGAGGCT	R-sc_0076	TCCTTTTACACTCTCACACCACGTGCGGGC	123	N
Scaffold_0077	768	87,025	15,462 F-sc_0077	TGATGATGCCAATGACGTTGTGGTGATGCCA	R-sc_0077	AGCAGGATCTCCACCAGTAATAATGGAATTTGGGGGA	195	N
Scaffold_0080	750	67,682	12,486 F-sc_0080	TGTGTCTTCTAGGTCTTGCGCTGCGGAGTC	R-sc_0080	ACCAACAAACAAATACGGCACATGCGCACAA	250	N
scatfold_0088	723	21,957	4,212 F-sc_0088	GGIGCCAACIGGCAIGAAGGCIGGIGIIII	R-sc_0088	AAACCAACACCCCCAGCAGCAGACTITIGGA	167	N
Scaffold 0091	710	22.077	20,038 F-sc_0090	ACCCCAAGAGACCCAAAACCCAGA	R-sc_0090 R-sc_0091	ACATACGCTGTTGCGTGTGTGGGGGGACAA	404	N
Manually	danianad	22,077	4,509 1-50_0091	ACOMPANYOR AND ACCOMPANY ACCOMPANY	R-30_0091	ACARCOLOTOCOLOTOCOLOTOCOLOCACIÓN	515	N
ivianually	uesigneu p	25 766	2 221 E co. 0020	CTCA ACCTA ACTATICA ACTCA ACCTCACATAC	P == 0029	COMMENTATION AND COMPACTOR AT A TOTAL COMPACT	247	P
scaffold_0038	1,490	17 112	1.911 E-sc_0038	GATATGATAATTTGGCACAAGTAATCTACCTGAAGTTACC	R-sc_0029	CAAAGATGTGTTGTCAAATATTTCACATTATACTCCGCTACC	755	D
scaffold 0044	938	11 146	1,511 F-sc 0044	CGGATTAATTGAAAGTCTATATACGGATTAATTGAAAGGAAAGCG	R-sc 0044	CAATTAATCCGTCTTCAGCTTCTAATATTCCCGC	552	B
scaffold 0046	1.025	15.142	2.037 F-sc 0046	GATATGCTCCTTCTATTGACAGAATAGATGATTATAAACC	R-sc 0046	ACTCATCTCCCCATAATACTTTATAACTTTTGCTTGTCC	373	N
scaffold_0047	993	32,733	4,551 F-sc_0047	GCTGTTGCAGGTGTATACATAAGTCTTAATACCC	R-sc_0047	AGTGTGAGTGGGCGAACACATGCAGGTG	333	в
scaffold_0048	972	53,853	6,909 F-sc_0048	CGCCACAGGTAGCCAGTGCATATCC	R-sc_0048	CATCAAGCCAATCAGGATATGCGTTAGCTACC	318	N
scaffold_0062	832	11,790	1,952 F-sc_0062	CATATATCACACAAACAAACCAACACAGAAAGCC	R-sc_0062	TCTGGCAAGACCTCTGCCCGAGTA	224	N
scaffold_0069	797	104,706	17,621 F-sc_0069	GATTATAAGATTTCATCTCAACTTCTTTAAGG	R-sc_0069	GCTAAAAAAGTATATGAAGAAACTATTAATCATGG	317	N
scaffold_0081	746	37,439	6,724 F-sc_0081	CCTAATTCTGCTTCAAACTCTTCTAAAGAAATAGG	R-sc_0081	TCTAATGAATTAGCTAAATTAGAAGGTGGTGTAACTCC	382	N
scaffold_0089	715	9,986	1,934 F-sc_0089	CAAITCTATATGTTTATATACAAITGTATGTTG	R-sc_0089	AGGAAGATTAGAGATGGGTCGTGTAGCGTAGCGG	331	N
scatfold_0099	643	81,487	16,917 F-sc_0099	CIACAFIAICAGAAGCITCACIAGICAFIACAIC	R-sc_0099	CIAGCIAICAAAAAIGCIAAAAIAAIAAAAAGAAIAIGG	275	N
scatfold_0100	640	5,705	1,255 F-sc_0100	GAGAIGAIAI IGAAGAUCAACGAAACG	R-sc_0100	TCTATCOCCCTCACTCTCCATCTCCC	258	N
scatfold_0104	492	9,504	2,819 F-SC_0104	ACCTTCTTA A A ACTACCTCTACCCACCTACT	R-sc_0104	GGTA AGA ACATCCA AA AAGTTAGGGCTATC	398	N
scaffold 0117	574	2.913	675 F-sc 0117	GCAGAGAATGAATATAGAGTAGAAATGG	R-sc_0107	GAACCCTAGGAAGTTACCGAATGG	273	N
scaffold 0120	566	26,316	6,091 F-sc 0120	GTGCACGAGAGTATGAAAGATACAG	R-sc 0120	CTTTTCTTTGGTTTTTTGACCGAGCGG	203	в
scaffold 0124	425	24,817	8,205 F-sc 0124	ACTTCCCAGAATGGAATAACGGCACC	R-sc 0124	TCTTTGTCTGCGGGGGATGCTTACTGCTTTGG	351	в
scaffold_0165	442	6,727	1,727 F-sc_0165	GTTGTTTCCTGGATGTTAACAGTTGTTTCACTATTG	R-sc_0165	GTCAACTATGGATGAAATGTACATTTGTTGATGG	298	N
Primers f	or RT-PCR							
contig_01	507	1,169,291	272,143 F-RT-contig 01	AGTCTGGTGCCAGCAGCCGCGGTAA	R-RT-contig_01	TGGCAAGGGGGACGACACCGCGCA	151	в
contig_02	1,078	1,716,902	187,935 F-RT-contig_02	TGGCAGTGGGGGCTTCCCGCGTGCGT	R-RT-contig_02	TGCGCCCCGCCCGAGGACGA	269	в
contig_03	591	2,663,373	531,773 F-RT-contig_03	TGGATGGCGCTAGAGCGTCGGGCCT	R-RT-contig_03	TGCACCCGAGGCGGCTCCACTCAGGCT	147	в
contig_06	937	1,318,363	166,027 F-RT-contig_06	CGCGCGGCGCCATTTCGGTGGCA	R-RT-contig_06	AGCGCGCGTGCGGCCCTGGA	116	N

Supplementa	1 Table 2. Primers used for gap closing	
Scaffold	F-primer	R-primer
Scaffold-1	GTGGTCTTGATTACATGACACAGTTAAAATTAGGGCATG	CGGGTCAATCCGTGGTATCTTTGATGCGTGTTCTAC
Scaffold-4	GCGGTGTTTTAGTTATTTCATTAAGTCCAATTTGGTGATACC	CTCGAAAATGTCTTTATGTCGATTCCACGAAATTACACATTACC
Scaffold-5	CAGTGAAAAATTCCATCAACCGATCACTTGTTGACC	CCATACGAACAAACCCATTTAGTGAACGCCGCCATACAATCTGG
Scaffold-7	CCGTCGAAATTACAAAACCTATCACGTCTCGGC	GTTTTTCTTAACCATCACCACATTAATCACCTGCTCTGAAGGC
Scaffold-8	CCTAGACCGATTAGTGATACATTCCATTCACGGC	GTCCGACGGAATATCCTTCTGGAAGTCGGAG
Scaffold-9	CAATTATGGATTACAAAACATGCAGTGGCGCGGACACC	GTCGGAGGATCAAGTGTTTGAACCAAAGATGGCTC
Scaffold-11	GTGGATTAATATTTGCGCCAATCCCTAATTTACCAAGTGCCG	CATAGCAAAAGGACAGTTATAAAAATCGGGAAATTGTGCGG
Scaffold-15	CTTCAAACACATTTATATCACGTGTTGCGGTGATTTGGCC	CCAAAAGATACAGTCTCATTATATATTGCTTATCCCG
Scaffold-38	GGTTCCACATGGTAAACATTTTCTAGCAACACTTGATGG	GGATACGGTAACTTCAGGTAGATTACTTGTGCC
Scaffold-53	CACCGTGATATCGCTATTGATATGACTGCAGCAG	CCAGAAATAATAGCATAAGATTGATGATCGTGTGAGTC
Scaffold-65	GACATGGGGCAAAAAAGAATTATAAATATAGCGGAGCC	CTCTTTCGCGCTCATATCAATTTCACCAGTCATTTGCC
Scaffold-66	CATGTAATTTATATCAAAAAAACTAGACTTTGCCCGCC	CCTATACCTGGTGAAACATTTGCAGAACTGGTTG
Scaffold-68	TTTGCCGAAAAGCGGTGGGCAAATAACTGG	GGAAAAGTAAAATATAAATTCGATCGCCAACTTAGTATTGG

F: forward, R: reverse

DRF-1 2 DRF-1 200 DRF-1 200 DRF-1 200 DRF-1 200 DRF-1 201 DRF-1 200 DRF-1 1002 DRF-1 200 DRF-1 200 DRF-1 200 DRF-2 201 DRF-3 201 DRF-3 201 DRF-3 201 DRF-3 201 DRF-3 201 DRF-3 201 DRF-4 201 D	2 970 2 970 5 246 4531 5434 4542 4534 4542 4534 4534 4534 7777 7254 7777 7254 7777 7254 7787 7254 780 8745 554 9388 8745 554 958 9388 958 9373 910 100566 9117 22389 9177 23228 928 23071 927 232379 937 24159 2474 22589 3474 23729 937 24179 928 23071 7172 232289 3400 23729 9383 3444 3434 3439 3434 3439 3434 3439 3434	**** **********************************	22 23 24 25 25 26 26 27 28 28 29 20 20 21 22 24 25 26 27 28 29 20 20 21 22 23 24 25 26 27 28 29 20 21 22 23 24 25 26 27 28 29 29 20 20 21 21 22 23 24 24 25 26 26 27 28 29 201 201 201 201 201 201 201 201 201 </th <th>Stenotrophononas plage DLP4 Spodopters frugipeeds multiple nucleopolyhedrovirus African avrine foer virus African swine foer virus African swine foer virus</th> <th>Siphewiridae Baculoviridae Anfarvirdae (NCLDV) Anfarvirdae (NCLDV) Anfarvirdae (NCLDV) Anfarvirdae (NCLDV) Anfarvirdae (NCLDV) Matharvirdae (NCLDV) Matharvirdae (NCLDV)</th> <th>AT592227.1 ACA02665.1 P0C9E4.1 P0C9E4.1 P0CA10.1 A122225.1 P0CA11.1 P0CA11.1 P0CA11.1 P0CA11.1 P0CA11.1 CAN10155.1</th> <th>122 55.8 75.1 87 539 525 525 213 123 180 1673</th> <th>8555 2056 9855 9356 9356 9356 9356 9356 9356 9556</th> <th>4.00E-34 9.00E-07 3.00E-17 2.00E-17 4.00E-87 0 1.00E-167 6.00E-63 9.00E-34 2.00E-54</th> <th>42.36 34.09 41.67 24.00 45.99 34.70 34.70</th>	Stenotrophononas plage DLP4 Spodopters frugipeeds multiple nucleopolyhedrovirus African avrine foer virus African swine foer virus African swine foer virus	Siphewiridae Baculoviridae Anfarvirdae (NCLDV) Anfarvirdae (NCLDV) Anfarvirdae (NCLDV) Anfarvirdae (NCLDV) Anfarvirdae (NCLDV) Matharvirdae (NCLDV) Matharvirdae (NCLDV)	AT592227.1 ACA02665.1 P0C9E4.1 P0C9E4.1 P0CA10.1 A122225.1 P0CA11.1 P0CA11.1 P0CA11.1 P0CA11.1 P0CA11.1 CAN10155.1	122 55.8 75.1 87 539 525 525 213 123 180 1673	8555 2056 9855 9356 9356 9356 9356 9356 9356 9556	4.00E-34 9.00E-07 3.00E-17 2.00E-17 4.00E-87 0 1.00E-167 6.00E-63 9.00E-34 2.00E-54	42.36 34.09 41.67 24.00 45.99 34.70 34.70
DRF-3 25641 DRF-3 25641 DRF-4 4521 DRF-4 4521 DRF-4 4521 DRF-4 4521 DRF-7 7727 DRF-7 7872 DRF-7 7872 DRF-1 1000 DRF-2 2000 DRF-3 2000 DRF-3 2000 DRF-3 2000 DRF-3 2000 DRF-3 2000 DRF-4 41200 DRF-4 41200	864 4534 864 4534 864 4534 865 4539 87772 7754 97777 7791 9778 7791 10105 9585 863 10105 10105 10356 957 11817 1757 1537 11534 14575 1453 14535 1453 14535 1453 14535 1453 14535 1453 14535 1453 14535 1453 14535 1453 14535 1453 14535 1453 14535 1523 23071 171 23280 171 23280 1023 23071 1042 23783 1122 25788 1223 23836 1224 25784 12334 44313 <tr< th=""><th>** .** *** * *** .** .** .** .** .** .*</th><th> ShiA YhiA YhiA ShiA <li< th=""><th>Stenotophononas plage DLP4 Spolopieras flugiporta multiple nucleopolyhedrovirus Activative Serve Vies Activative Serve Vies</th><th>Siphoviridae Baculoviridae Mafrividae (NCLDV) Arfarvidae (NCLDV) Arfarvidae (NCLDV) Arfarvidae (NCLDV) Arfarvidae (NCLDV) Arfarvidae (NCLDV)</th><th>ATS92227.1 ACA02668.1 POCME4.1 POCME4.1 POCME4.1 POCME4.1 POCME4.1 POCME4.1 POCME4.1 POCME4.1 POCME4.1 AZ205225.1 CAN10155.1</th><th>122 55.8 75.1 87 269 525 525 213 213 123 186 1673</th><th>20% 98% 71% 93% 97% 97%</th><th>4.00E-34 9.00E-07 3.00E-17 2.00E-17 4.00E-07 1.00E-167 6.00E-63 9.00E-34 2.00E-54</th><th>42.36 34.09 41.67 24.00 45.99 41.10 34.70 38.36</th></li<></th></tr<>	** .** *** * *** .** .** .** .** .** .*	 ShiA YhiA YhiA ShiA <li< th=""><th>Stenotophononas plage DLP4 Spolopieras flugiporta multiple nucleopolyhedrovirus Activative Serve Vies Activative Serve Vies</th><th>Siphoviridae Baculoviridae Mafrividae (NCLDV) Arfarvidae (NCLDV) Arfarvidae (NCLDV) Arfarvidae (NCLDV) Arfarvidae (NCLDV) Arfarvidae (NCLDV)</th><th>ATS92227.1 ACA02668.1 POCME4.1 POCME4.1 POCME4.1 POCME4.1 POCME4.1 POCME4.1 POCME4.1 POCME4.1 POCME4.1 AZ205225.1 CAN10155.1</th><th>122 55.8 75.1 87 269 525 525 213 213 123 186 1673</th><th>20% 98% 71% 93% 97% 97%</th><th>4.00E-34 9.00E-07 3.00E-17 2.00E-17 4.00E-07 1.00E-167 6.00E-63 9.00E-34 2.00E-54</th><th>42.36 34.09 41.67 24.00 45.99 41.10 34.70 38.36</th></li<>	Stenotophononas plage DLP4 Spolopieras flugiporta multiple nucleopolyhedrovirus Activative Serve Vies Activative Serve Vies	Siphoviridae Baculoviridae Mafrividae (NCLDV) Arfarvidae (NCLDV) Arfarvidae (NCLDV) Arfarvidae (NCLDV) Arfarvidae (NCLDV) Arfarvidae (NCLDV)	ATS92227.1 ACA02668.1 POCME4.1 POCME4.1 POCME4.1 POCME4.1 POCME4.1 POCME4.1 POCME4.1 POCME4.1 POCME4.1 AZ205225.1 CAN10155.1	122 55.8 75.1 87 269 525 525 213 213 123 186 1673	20% 98% 71% 93% 97% 97%	4.00E-34 9.00E-07 3.00E-17 2.00E-17 4.00E-07 1.00E-167 6.00E-63 9.00E-34 2.00E-54	42.36 34.09 41.67 24.00 45.99 41.10 34.70 38.36
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NR-1-4 10421 NR-1-5 11.75 NR-1-5 11.75 NR-1-5 11.75 NR-1-5 11.75 NR-1-6 11.35 NR-1-7 11.335 NR-1-7 11.335 NR-1-8 11.355 NR-1-9 11.335 NR-1-9 11.335 NR-1-9 11.335 NR-1-9 11.335 NR-1-9 11.335 NR-1-9 21.335 NR-2-10 10.997 NR-2-20 22.023 NR-2-30 20.011 NR-3-3 22.023 NR-3-3 22.043 NR-3-3 22.043 NR-3-3 22.043 NR-3-3 22.043 NR-3-3 22.044 NR-3-3 22.043 NR-3-4 20.041 NR-4-4 20.041 NR-4-5 20.041 NR-4-4 20.041 NR-4-4 20.041 NR-4-4	$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$	** *** * * * * * * * * * * * * * * * * *	6 inhibition of apoptosis protein (1AP-3) 7 inhibition of kap protein; A104R 9 inhibition of kap protein; A104R 9 Uncharacterized protein F171.7 9 Incharacterized protein F171.7 9 Incharacterized protein summant 90 Polative helicase jorimase complex protein pF105SL 97 Incharacterized protein summant 98 Probable methyltramsferase, EP424R 91 Incharacterized protein S12 92 Probable methyltramsferase, EP424R 93 Phylophymerase subunit 2 94 Probable methyltramsferase, EP424R 94 Uncharacterized protein C129R 94 Uncharacterized protein C129R 94 Uncharacterized protein C122R 94 Uncharacterized protein C127R	Spodoptern fragiperti multiple nucleopolyholtovinus Afstan swine forer vinus Afstan swine forer vinus	Baculoviridae Asfarvirdae (NCLDV) Asfarvirdae (NCLDV) Asfarvirdae (NCLDV) Asfarvirdae (NCLDV) Asfarvirdae (NCLDV) Asfarvirdae (NCLDV) Asfarvirdae (NCLDV) Asfarvirdae (NCLDV) Asfarvirdae (NCLDV)	ACA02665.1 P0CX80.1 A1V22235.1 A1V22235.1 P0CA11.1 P0CA11.1 P0CA11.1 P0CA11.1 VP_009408474.1 AXZ25523.1 CAN1015.1	55.8 75.1 87 269 525 213 213 123 186 1673	20% 98% 98% 97% 97% 89% 97%	9.00E-07 3.00E-17 4.00E-87 0 1.00E-167 6.00E-63 9.00E-34 2.00E-52	34.09 41.67 24.00 45.90 41.10 34.70 38.36
NBE-16 12085 NBE-16 12085 NBE-16 12085 NBE-16 14151 NBE-16 14151 NBE-16 14151 NBE-16 14151 NBE-16 14151 NBE-16 14151 NBE-20 15277 NBE-20 15277 NBE-20 15277 NBE-20 22171 NBE-20 22171 NBE-20 22171 NBE-20 22071 NBE-20 22071 <td>085 133711 085 133711 133711 133711 133711 15434 13721 165434 13721 165434 13721 165434 13721 165434 13721 165434 13721 165434 13722 125896 1410 223891 1411 223124 1412 231344 243141 243151 13732 23249 13742 23789 13743 23784 13742 23789 13743 23744 13743 23514 13743 23616 13743 23616 13743 23616 13743 23616 1383 30612 1384 30612 1384 30612 1384 43513 1384 43614 1384 43614 1384</td> <td>· * * · · * · * * * * * * * * * * * * *</td> <td></td> <td>Spologhera fragjered multiple nucleopolyhodrovins African swine forer virus African swine forer virus African swine forer virus African swine forer virus African swine forer virus Mirkan swine forer virus African swine forer virus</td> <td>Baculoviridae Asfarvirdae (NCLDV) Asfarvirdae (NCLDV) Asfarvirdae (NCLDV) Asfarvirdae (NCLDV) Asfarvirdae (NCLDV) Asfarvirdae (NCLDV) Asfarvirdae (NCLDV) Asfarvirdae (NCLDV) Asfarvirdae (NCLDV) Asfarvirdae (NCLDV)</td> <td>ACA02683.1 POC546.1 POC546.1 AV22235.1 AV223521.1 POCA11.1 POCA11.1 POC411.1 POC411.1 AV25521.1 POC411.1 AV25521.1 AV255</td> <td>55.8 75.1 87 269 525 525 213 123 186 186</td> <td>20% 98% 98% 97% 97% 89% 96% 96% 98%</td> <td>9.00E-07 3.00E-17 2.00E-17 4.00E-87 0 1.00E-167 6.00E-63 9.00E-63</td> <td>34.09 41.67 24.00 45.90 41.10 34.70 38.36</td>	085 133711 085 133711 133711 133711 133711 15434 13721 165434 13721 165434 13721 165434 13721 165434 13721 165434 13721 165434 13722 125896 1410 223891 1411 223124 1412 231344 243141 243151 13732 23249 13742 23789 13743 23784 13742 23789 13743 23744 13743 23514 13743 23616 13743 23616 13743 23616 13743 23616 1383 30612 1384 30612 1384 30612 1384 43513 1384 43614 1384 43614 1384	· * * · · * · * * * * * * * * * * * * *		Spologhera fragjered multiple nucleopolyhodrovins African swine forer virus African swine forer virus African swine forer virus African swine forer virus African swine forer virus Mirkan swine forer virus African swine forer virus	Baculoviridae Asfarvirdae (NCLDV) Asfarvirdae (NCLDV) Asfarvirdae (NCLDV) Asfarvirdae (NCLDV) Asfarvirdae (NCLDV) Asfarvirdae (NCLDV) Asfarvirdae (NCLDV) Asfarvirdae (NCLDV) Asfarvirdae (NCLDV) Asfarvirdae (NCLDV)	ACA02683.1 POC546.1 POC546.1 AV22235.1 AV223521.1 POCA11.1 POCA11.1 POC411.1 POC411.1 AV25521.1 POC411.1 AV25521.1 AV255	55.8 75.1 87 269 525 525 213 123 186 186	20% 98% 98% 97% 97% 89% 96% 96% 98%	9.00E-07 3.00E-17 2.00E-17 4.00E-87 0 1.00E-167 6.00E-63 9.00E-63	34.09 41.67 24.00 45.90 41.10 34.70 38.36
BRE-16. 1755:1 BRE-16. 1755:1 BRE-16. 1755:1 BRE-16. 1755:1 BRE-20. 1871:1 BRE-21. 1871:1 BRE-22. 1871:1 BRE-23. 1871:1 BRE-24. 1871:1 BRE-25. 1871:1 BRE-26. 2871:1 BRE-27. 1871:1 BRE-28. 22016 BRE-29. 22017 BRE-29. 22018 BRE-29. 22018 BRE-29. 22018 BRE-29. 22018 BRE-40. 1010:1 BRE-41. 1100:1 BRE-42. 22018 BRE-43. 2404:1 BRE-44. 2404:1 <	755 14435. 14435. 14435. 157 14435. 16979 123660 977 23660 978 12060 160 22221 173 23260 1416 22221 173 24316 173 24316 1733 24316 2972 27795 2772 27795 2772 27795 2772 27795 2772 27795 2772 27795 2772 27795 24313 23051 252 27295 2772 27795 2772 27795 2272 27795 2372 27795 24313 23641 24331 23264 24341 24303 252 42851 24341 43021 24341 43021 27795 57114	* • • • • * * * * * * * * * * * * * * *	Software service of protein F17.1 Software service of the	Affician swine fever virus Affician swine fever virus Affician swine fever virus Affican swine fever virus Mirican swine fever virus Mirican swine fever virus Affican swine fever virus	Anfarvindae (NCLDV) Anfarvindae (NCLDV) Anfarvindae (NCLDV) Anfarvindae (NCLDV) Anfarvindae (NCLDV) powing (NCLDV) Anfarvindae (NCLDV) Anfarvindae (NCLDV) Anfarvindae (NCLDV) Anfarvindae (NCLDV)	PRCAE0.1 AV2235.1 AV225521.1 P0CA11.1 P0CA11.1 P0CA11.1 VIP.00040874.1 AV205525.1 CAN10153.1	87 269 559 525 213 123 186 1673	71% 98% 93% 97% 89% 96% 96% 96%	2.00E-17 4.00E-87 0 1.00E-167 6.00E-63 9.00E-63	24.00 45.90 41.10 34.70 38.36
MRL-20. 15-72.0 MRL-20. 22.017.0 MRL-20. 22.017.0 MRL-20. 22.028.1 MRL-20. 22.141.2 MRL-20. 22.141.2 MRL-20. 22.141.2 MRL-20. 22.141.2 MRL-20. 22.142.2 MRL-20. 22.142.2 MRL-20. 22.142.2 MRL	$\begin{array}{cccccccccccccccccccccccccccccccccccc$			African swine Fever virus African swine fever virus African swine fever virus NY_014 poxvirus African swine fever virus African swine fever virus	Asfarvidae (NCLDV) Asfarvidae (NCLDV) Asfarvidae (NCLDV) Asfarvidae (NCLDV) proving (NCLDV) Asfarvidae (NCLDV) Asfarvidae (NCLDV) Asfarvidae (NCLDV)	AIY222351 AX223521.1 P0CA11.1 P0CA11.1 P0CA11.1 P0CA11.1 P0CA11.1 P0CA11.1	269 559 525 213 123 186 1673	98% 93% 97% 89% 96% 96% 96%	4.00E-87 0 1.00E-167 6.00E-63 9.00E-63 9.00E-34 2.00E-52	45.90 41.10 34.70 38.36
DRI-13 DRI-13 DRI-14 DRI-14 DRI-14 DRI-14 DRI-15 DRI-14 DRI-15 DRI-14 DRI-14 DRI-14 DRI-15 DRI-16 DRI-15 DRI-14 DRI-16 DRI-16 DRI-15 DRI-16 DRI-16 DRI-14 DRI-16 DRI-16 DRI-15 DRI-16 DRI-16 DRI-16 DRI-16 <tddri-16< td=""> DRI-16 <t< td=""><td>$\begin{array}{cccccccccccccccccccccccccccccccccccc$</td><td></td><td>20 Putative belicase/primase complex proteins/P1055L 20 20 20 20 20 20 20 20 20 20 20 20 20</td><td>African swine fever virus African swine fever virus NY, 014 poxvirus African swine fever virus African swine fever virus</td><td>Aafarviridae (NCLDV) Aafarviridae (NCLDV) potvino (NCLDV) Aafarvidae (NCLDV) Aafarvidae (NCLDV)</td><td>P0CA11.1 AJL34069.1 YP_009408474.1 AXZ95828.1 CAN10153.1</td><td>213 123 186 1673</td><td>97% 89% 96% 98%</td><td>6.00E-63 9.00E-34 2.00E-52</td><td>34.70 38.36</td></t<></tddri-16<>	$\begin{array}{cccccccccccccccccccccccccccccccccccc$		20 Putative belicase/primase complex proteins/P1055L 20 20 20 20 20 20 20 20 20 20 20 20 20	African swine fever virus African swine fever virus NY, 014 poxvirus African swine fever virus African swine fever virus	Aafarviridae (NCLDV) Aafarviridae (NCLDV) potvino (NCLDV) Aafarvidae (NCLDV) Aafarvidae (NCLDV)	P0CA11.1 AJL34069.1 YP_009408474.1 AXZ95828.1 CAN10153.1	213 123 186 1673	97% 89% 96% 98%	6.00E-63 9.00E-34 2.00E-52	34.70 38.36
MRI-34 23.14.0 MRI-34 23.14.0 MRI-34 23.14.0 MRI-37 23.14.1 MRI-37 23.14.1 MRI-38 24.24.2 MRI-39 24.43.1 MRI-38 24.42.3 MRI-38 24.42.3 MRI-38 24.42.3 MRI-38 24.42.3 MRI-38 24.43.3 MRI-38 24.43.3 MRI-38 24.43.3 MRI-38 24.43.3 MRI-44 24.33.1 MRI-44 24.34.3 MRI-45 44.34.3 MRI-45 44.34.3 MRI-46 24.34.3 MRI-46 24.34.3 MRI-47 24.34.3 MRI-46 24.34.3	4162 225891 2228 22381 2228 22381 228 22381 23220 23270 23220 23271 232320 23272 9377 24119 4148 245154 24742 25788 24742 25788 24742 25788 24742 25788 24742 25788 24742 25788 24742 25788 24742 25788 24574 26508 24571 26508 25971 0059 35913 34902 3990 35913 3184 34514 314 45849 41414 47899 3134 458419 41414 47898 314 458419 45141 47898 31529 3533 31629 4534137 31629	*****	7 7 7 7 7 7 7 8 6 7 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	African swine fever virus NY, 0.14 poss-trus African swine fever virus African swine fever virus African swine fever virus African swine fever virus African swine fever virus	Asfarviridae (NCLDV) potvirus (NCLDV) Asfarviridae (NCLDV) Asfarviridae (NCLDV)	AJL34069.1 YP_00408474.1 AXZ95828.1 CAN10153.1	213 123 186 1673	89% 96% 98%	6.00E-63 9.00E-34 2.00E-52	38.36
SRE-22 20263 SRE-23 20264 SRE-24 20264 SRE-24 20264 SRE-25 20261 SRE-26 20261 SRE-26 20261 SRE-26 20271 SRE-26 20281 SRE-26 20281 <td>0741 22229 0741 22229 0741 22229 0801 23729 123729 323729 12373 24316 1245 24709 1373 24516 12470 25788 12470 25788 12470 25788 12470 25788 12470 25788 12470 25788 12470 25788 12470 25788 1249 13001 1249 13013 1244 42811 1258 42551 1264 45801 1244 4581 1244 4581 1244 4581 1244 4581 1244 4581 1244 4581 1244 4581 1244 4581 1244 4581 1244 4581 1248 45841</td> <td></td> <td>1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1</td> <td>African swine fever virus NY_014 poxyine African swine fever virus African swine fever virus</td> <td>Asfarviridae (NCLDV) powiring (NCLDV) Asfarvirdae (NCLDV) Asfarviridae (NCLDV)</td> <td>AJL34069.1 YP_009408474.1 AXZ95828.1 CAN10153.1</td> <td>213 123 186 1673</td> <td>89% 96% 98%</td> <td>6.00E-63 9.00E-34 2.00E-52</td> <td>38.36</td>	0741 22229 0741 22229 0741 22229 0801 23729 123729 323729 12373 24316 1245 24709 1373 24516 12470 25788 12470 25788 12470 25788 12470 25788 12470 25788 12470 25788 12470 25788 12470 25788 1249 13001 1249 13013 1244 42811 1258 42551 1264 45801 1244 4581 1244 4581 1244 4581 1244 4581 1244 4581 1244 4581 1244 4581 1244 4581 1244 4581 1244 4581 1248 45841		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	African swine fever virus NY_014 poxyine African swine fever virus African swine fever virus	Asfarviridae (NCLDV) powiring (NCLDV) Asfarvirdae (NCLDV) Asfarviridae (NCLDV)	AJL34069.1 YP_009408474.1 AXZ95828.1 CAN10153.1	213 123 186 1673	89% 96% 98%	6.00E-63 9.00E-34 2.00E-52	38.36
RRF-29 23401 RRF-29 23401 RRF-30 23401 RRF-31 24501 RRF-31 24501 RRF-31 24501 RRF-31 24501 RRF-31 24502 RRF-34 24502 RRF-34 24502 RRF-34 24502 RRF-34 24502 RRF-34 24502 RRF-34 25002 RRF-34 25002 RRF-34 25002 RRF-34 25002 RRF-34 25002 RRF-34 26002 RRF-35 26002 RRF-36 26002 RRF-36 26002 RRF-36 26002 <td>$\begin{array}{cccccccccccccccccccccccccccccccccccc$</td> <td>*****</td> <td>2 3 4 4 4 5 6 7 7 7 7 7 8 9 1 9 1 9 1 9 1 9 1 9 1 9 1 9 1 9 1 1 9 1 1 1 1 1 1 1 1 1 1 1 1 1</td> <td>African swine fever virus NY_014 poxyina African awine fever virus African swine fever virus</td> <td>Asfarviridae (NCLDV) potvirus (NCLDV) Asfarviridae (NCLDV) Asfarviridae (NCLDV)</td> <td>AJL34069.1 YP_009408474.1 AXZ95828.1 CAN10153.1</td> <td>213 123 186 1673</td> <td>89% 96% 98%</td> <td>6.00E-63 9.00E-34 2.00E-52</td> <td>38.36</td>	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	*****	2 3 4 4 4 5 6 7 7 7 7 7 8 9 1 9 1 9 1 9 1 9 1 9 1 9 1 9 1 9 1 1 9 1 1 1 1 1 1 1 1 1 1 1 1 1	African swine fever virus NY_014 poxyina African awine fever virus African swine fever virus	Asfarviridae (NCLDV) potvirus (NCLDV) Asfarviridae (NCLDV) Asfarviridae (NCLDV)	AJL34069.1 YP_009408474.1 AXZ95828.1 CAN10153.1	213 123 186 1673	89% 96% 98%	6.00E-63 9.00E-34 2.00E-52	38.36
SRF-31 20146 SRF-32 20146 SRF-32 20146 SRF-32 20146 SRF-32 20146 SRF-32 20147 SRF-34 2020 SRF-34 2020 SRF-36 2020 SRF-37 2014 SRF-36 2020 SRF-37 2014 SRF-36 2017 SRF-36 2017 SRF-36 2017 SRF-46 2017 SRF-46 2017 SR	148 24351 148 24451 173 24516 2412 24709 143 24709 143 24709 143 24709 241 23784 241 237871 241 28671 20571 212795 3189 34002 3955 36381 444 24853 522 42251 524 43841 314 44309 214 43401 314 45494 343 45494 343 45494 343 45494 343 45494 343 45494 353 50505 3531 50156 3505 50505 3503 50516 3503 50516 3503 50516 3503 50516 3603 623834	* * * * * * * * * * * * * * * * * * * *	7 7 44 45 46 47 48 48 49 49 49 40 41 42 43 44 44 45 46 47 48 48 49 49 40 41 41 41 42 43 44 44 44 44 45 44 46 47 48 44 49 44 41 41 42 42 43 44 44 44 45 46 <	African swine fever virus NY_014 poxvins African swine fever virus African swine fever virus	Asfarviridae (NCLDV) pozvirus (NCLDV) Asfarviridae (NCLDV) Asfarviridae (NCLDV) Asfarviridar (NCLDV)	AJL34069.1 YP_009408474.1 AXZ95828.1 CAN10153.1	213 123 186 1673	89% 96% 98%	6.00E-63 9.00E-34 2.00E-52	38.36
DBC33 22454 DBC33 22454 DBC34 22454 DBC34 22454 DBC34 22452 DBC34 22472 DBC34 22472 DBC34 22472 DBC34 22472 DBC34 22472 DBC34 22492 DBC34 22492 DBC34 22492 DBC34 2252 DBC34 23532 DBC34 23532 DBC44 23494 DBC45 2352 DBC45 2552 DBC45	545 24709 545 24709 225788 26536 571 25976 040 25778 949 35013 35913 35333 3463 242879 949 35013 3353 35333 346 42321 348 34102 128 43403 4534 45349 4433 46349 4433 46349 4535 5605 145 54003 95 56055 145 54003 95 56055 1717 56356 1715 59334 1715 62428 182 62425 193 62035	** ** * * * * * * * * * * * * * * * * *	A B Posbale methyltransferase, EP424R Posbale methyltransferase, EP424R Posbale methyltransferase, EP424R Posbale methyltransferase, EP424R Posbale methyltransferase, September 20 Posbale methyltransferase, Postember 20 Posbale methyltransferase, Postember 20	African swine fever virus NY, 0.14 poxvirus African avine fever virus African avine fever virus	Asfarviridae (NCLDV) poavirus (NCLDV) Asfarviridae (NCLDV) Asfarviridae (NCLDV) Asfarviridae (NCLDV)	AJL34069.1 YP_009408474.1 AXZ95828.1 CAN10153.1	213 123 186 1673	89% 96% 98%	6.00E-63 9.00E-34 2.00E-52	38.36
BRI-55. SS2301 BRI-55. SS2301 BRI-55. SS2301 BRI-56. SS2301 BRI-57. ZFR45. BRI-58. SR2701 BRI-58. SR2701 BRI-58. SR2701 BRI-58. SR2701 BRI-58. SR2701 BRI-50. SR2701 BRI-60. SR2701	820 26530 820 26630 827 27798 828 28971 949 3103 930 3513 930 3638 930 3638 931 3638 931 3638 931 3638 931 3638 931 3638 931 3638 932 288 933 4334 943 3522 944 3124 943 31238 943 3632 952 4884 943 3434 944 45314 943 45349 944 45319 9452 48841 9452 3632 9455 56056 945 56056 945 56056 945 56056 945 56056 945 56	- + + + - + + +	Probable methyltram/ferase, EP424R Probable methyltram/ferase, EP424R thormdine kinase thormdine kinase To thormdine kinase T	African swine fever virus NY_014 poxvirus African swine fever virus African swine fever virus	Asfarviridae (NCLDV) poxvirus (NCLDV) Asfarviridae (NCLDV) Asfarviridae (NCLDV) Asfarviridar (NCLDV)	AJL34069.1 YP_009408474.1 AXZ95828.1 CAN10153.1	213 123 186 1673	89% 96% 98%	6.00E-63 9.00E-34 2.00E-52	38.36
PRE-19. 2054.3 PRE-19. 2064.3 PRE-10. 2074.3 PRE-10. 2074.3 PRE-10. 2074.3 PRE-10. 2074.3 PRE-10. 2074.3 PRE-10. 2074.3 PRE-10. 2074.4 PRE-10. 2074.5 PRE-10. 2074.7	834 28658 000 28971 000 28971 000 29771 990 35913 990 35913 9353 36381 4124 4233 552 42851 4128 4233 4524 45014 4534 43192 218 34031 454 45014 4534 4514 454 45014 454 45014 454 45014 454 45014 452 4884 43192 222 4884 43192 218 3603 707 5407 715 59056 717 50565 717 50456 717 60458 718 60566 717 60480 718 60566 717 60480 718 <td>* * * * * * * * * * * * * * * * * * * *</td> <td>4 44 45 46 47 48 48 49 41 41 41 42 43 44 45 46 47 48 49 40 41 41 42 43 44 44 44 44 45 46 46 46 47 47 48 49 49 40 40 41 41 41 41 42 42 43 44 44 44 44 45 46 46 47 47 48 49 44 44 44 45 46 46 47 47 48</td> <td>NY .014 passing African swine fever virus African swine fever virus</td> <td>poxvirus (NCLDV) Asfarviridae (NCLDV) Asfarviridae (NCLDV) Asfarviridae (NCLDV)</td> <td>YP_009408474.1 AXZ95828.1 CAN10153.1</td> <td>123 186 1673</td> <td>96% 96% 98%</td> <td>9.00E-34 2.00E-52</td> <td></td>	* * * * * * * * * * * * * * * * * * * *	4 44 45 46 47 48 48 49 41 41 41 42 43 44 45 46 47 48 49 40 41 41 42 43 44 44 44 44 45 46 46 46 47 47 48 49 49 40 40 41 41 41 41 42 42 43 44 44 44 44 45 46 46 47 47 48 49 44 44 44 45 46 46 47 47 48	NY .014 passing African swine fever virus African swine fever virus	poxvirus (NCLDV) Asfarviridae (NCLDV) Asfarviridae (NCLDV) Asfarviridae (NCLDV)	YP_009408474.1 AXZ95828.1 CAN10153.1	123 186 1673	96% 96% 98%	9.00E-34 2.00E-52	
MRI-30 99030 MRI-30 99030 MRI-30 99030 MRI-40 1100 MRI-40 1100 MRI-40 10000 MRI-50 40000 MRI-50 40000 MRI-50 40000 MRI-50 40000 MRI-50 50000 MRI-70 60000	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	** ** * * * * * * * * * * * * * * * * *	thermittee knase thermittee knase thermittee knase T RNA polymerase subunit 2 T RNA polymerase subunit 2 T RNA polymerase T RNA polymerase subunit 2 Polymerase relations T RNA polymerase calaboration T RNA polymerase calaboration T RNA polymerase relations	NY 114 provinse African swire forer visus African swire forer visus	poxvrtus (NCLDV) Asfarviridae (NCLDV) Asfarviridae (NCLDV)	472 009408474.1 AXZ95828.1 CAN10153.1	123 186 1673	96% 96% 98%	9.00E-34 2.00E-52	
SRF-42 19990 SRF-42 19930 SRF-43 19930 SRF-44 19800 SRF-44 19800 SRF-44 19800 SRF-44 19800 SRF-44 12800 SRF-44 12800 SRF-44 12800 SRF-44 12800 SRF-44 12800 SRF-44 12800 SRF-45 42810 SRF-46 12800 SRF-57 49711 SRF-54 44310 SRF-54 44310 SRF-54 45712 SRF-54 45712 SRF-54 45712 SRF-64 55673 SRF-74 45711 SRF-74 45717 SRF-74 45717 SRF-74 45717 SRF-74 45717 SRF-74 45717 SRF-74 45717 SRF-74 45714 SRF-74 45724 <td>000 35011 000 35011 000 35011 010 35011 010 35011 011 7739 012 4124 013 41244 014 4738 015 24281 014 4738 015 4254 014 4738 015 46349 014 47389 015 46349 016 4728 016 47278 017 5186 016 48501 115 5934 115 5934 115 5934 115 69356 116 61454 117 60480 1182 62425 113 62388</td> <td>* * * * * * * * * * * * * * * * * * * *</td> <td>yr Archyddynau ac sanuau 2 yr Archyddynau ac ynwyn a ywrain a wyrain a wyra</td> <td>African swine (ever virus African swine fever virus African swine fever virus African swine fever virus</td> <td>Asfarviridae (NCLDV)</td> <td>CAN10155.1</td> <td>1075</td> <td>20/0</td> <td>0</td> <td>34.24 30.57</td>	000 35011 000 35011 000 35011 010 35011 010 35011 011 7739 012 4124 013 41244 014 4738 015 24281 014 4738 015 4254 014 4738 015 46349 014 47389 015 46349 016 4728 016 47278 017 5186 016 48501 115 5934 115 5934 115 5934 115 69356 116 61454 117 60480 1182 62425 113 62388	* * * * * * * * * * * * * * * * * * * *	yr Archyddynau ac sanuau 2 yr Archyddynau ac ynwyn a ywrain a wyrain a wyra	African swine (ever virus African swine fever virus African swine fever virus African swine fever virus	Asfarviridae (NCLDV)	CAN10155.1	1075	20/0	0	34.24 30.57
NRF-44 53640 NRF-45 7355 NRF-45 7355 NRF-45 7352 NRF-45 7352 NRF-45 7352 NRF-45 7352 NRF-45 4523 NRF-45 4523 NRF-46 4524 NRF-47 4524 NRF-48 4524 NRF-48 4524 NRF-47 4524 NRF-48 4524 NRF-48 4524 NRF-54 4524 NRF-54 4524 NRF-54 4524 NRF-54 4524 NRF-54 4524 NRF-54 5138 NRF-64 5407 NRF-74 6424 NRF-76 7028 NRF-76 7028 NRF-77 7028 NRF-77 7028 NRF-78 7028 NRF-78 7028 NRF-78 7028 NRF-78<	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	* • * * • • * • • • • • • • • • • • • •	III pEP364R 20 IA71VoM229L 20 IA71VoM229L 20 IA71VoM229L 40 Incharacterized protein C129R 40 40 Uncharacterized protein C717R 50 Uncharacterized protein C122R 50 Uncharacterized protein C122R 50 Uncharacterized protein C122R	African swine fever virus African swine fever virus African swine fever virus African swine fever virus	Asfarviridae (NCLDV)				0	64.98
RRF-46 41205 RRF-46 41205 RRF-47 42525 RRF-47 42524 RRF-48 45244 RRF-48 45244 RRF-48 45244 RRF-48 45244 RRF-48 45244 RRF-41 45254 RRF-41 45254 RRF-41 45244 RRF-41 45445 RRF-41 45445 RRF-41 54445 RRF-41 54445 RRF-42 54473 RRF-43 54435 RRF-44 54173 RRF-45 54435 RRF-45 54435 RRF-46 7117 RRF-46 7117 RRF-46 7117 RRF-46 7117 RRF-47 64523 RRF-47 71674 RRF-48 54647 RRF-48 54647 RRF-48 54647 RRF-48 54647	266 42533 266 42533 5428 43192 5428 43192 218 43403 540 45501 524 45841 843 46349 401 47789 822 48841 836 9255 3632 273 5438 5203 5363 53632 571 51345 5363 53632 571 5437 5405 56056 56056 56056 5877 51417 107 57646 171 66380 182 62381 1515 9334 171 60480 182 62285 182 62381 192 62384	* * • • * • • • • • • • • • • • • • • •	js pM448 pM448 pM448 pm449 pm54	African swine fever virus African swine fever virus	Asfarairidae (NCLDV)	AXB49288.1 P0CAB5.1	97.8 442	96% 78%	3.00E-21 2.00E-132	27.08
DRI-14. 42-86 DRI-14. 42-86 DRI-16. 42-86 DRI-16. 42-86 DRI-16. 42-86 DRI-16. 42-86 DRI-16. 44-80 DRI-16. 56-71 DRI-17. 62-66 DRI-78. 70-72 DRI-74. 66-66 DRI-74. 66-67 DRI-74. 66-61 DRI-74.	848 41102 218 43403 4500 45501 524 45841 843 46349 401 47789 822 48841 836 49255 571 51829 838 52203 208 53632 573 54137 145 54903 905 56056 971 56556 971 56556 971 56546 107 57646 107 57646 115 59334 182 62425 182 62425		Incharacterized protein C129R Uncharacterized protein C717R Uncharacterized protein C717R Uncharacterized protein C122R Putative poly(A) polymerase catalytic solumit	African swine fever virus	Asfarviridae (NCLDV)	AXB49290.1	102	71%	1.00E-21	26.54
NRF-50 4.450 NRF-50 4.545 NRF-51 4.554 NRF-51 4.554 NRF-51 4.554 NRF-51 4.554 NRF-51 4.554 NRF-54 4.722 NRF-54 4.722 NRF-54 4.722 NRF-54 4.722 NRF-54 4.721 NRF-64 5.6817 NRF-64 5.6817 NRF-74 4.542 NRF-74 4.742 NRF-74 5.742 NRF-74 5.742 </td <td>450 4550⁻¹ 524 45841 524 46349 401 47789 822 48841 836 49255 571 51829 838 5203 905 56056 971 56556 587 57114 107 57646 1715 59334 171 60480 182 62888</td> <td>+ +</td> <td>83 Uncharacterized protein C717R Uncharacterized protein C122R Putative poly(A) polymerase catalytic subunit</td> <td></td> <td>Asfarviridae (NCLDV)</td> <td>P0CA38.1</td> <td>93.6</td> <td>94%</td> <td>5.00E-24</td> <td>41.96</td>	450 4550 ⁻¹ 524 45841 524 46349 401 47789 822 48841 836 49255 571 51829 838 5203 905 56056 971 56556 587 57114 107 57646 1715 59334 171 60480 182 62888	+ +	83 Uncharacterized protein C717R Uncharacterized protein C122R Putative poly(A) polymerase catalytic subunit		Asfarviridae (NCLDV)	P0CA38.1	93.6	94%	5.00E-24	41.96
DRF-52 45843 PRF-53 44601 PRF-53 44614 PRF-54 45014 PRF-54 51208 PRF-54 51207 PRF-74 5121 PRF-74 5121	843 46349 401 47789 4025 48841 836 49255 509 49596 571 51829 838 52203 208 53632 673 54137 711 56556 587 57114 107 57636 1715 59334 371 60480 182 62488 139 62888	*	68 62 Putative poly(A) polymerase catalytic subunit	African swine fever virus African swine fever virus	Asfarviridae (NCLDV) Asfarviridae (NCLDV)	P0CAJ6.1 P0CA22.1	307 94	96% 95%	1.00E-92 1.00E-24	31.61 44.00
NRE-54 47822 NRE-54 48400 NRE-55 48400 NRE-56 48400 NRE-57 48400 NRE-57 48400 NRE-57 58400 NRE-57 58400 NRE-57 58410 NRE-57 58412 NRE-57 58412 NRE-57 58412 NRE-67 58412 NRE-68 58412 NRE-67 58412 NRE-68 58412 NRE-68 58412 NRE-68 58402 NRE-68 58402 NRE-68 58402 NRE-78 58412 NRE-78 58412 <td>822 48841 836 49255 369 49596 571 51829 838 52203 208 33632 673 54137 145 54903 905 56056 971 56556 107 57646 715 59334 371 60480 104 52425 139 62888</td> <td>+</td> <td>and the second s</td> <td>African swine fever virus</td> <td>Asfarviridae (NCLDV)</td> <td>P0C9D2.1</td> <td>258</td> <td>100%</td> <td>6.00E-79</td> <td>34.16</td>	822 48841 836 49255 369 49596 571 51829 838 52203 208 33632 673 54137 145 54903 905 56056 971 56556 107 57646 715 59334 371 60480 104 52425 139 62888	+	and the second s	African swine fever virus	Asfarviridae (NCLDV)	P0C9D2.1	258	100%	6.00E-79	34.16
mar. >>b. 99/99 mar. >>b. 52208 mar. >>b. 52208 mar. >>b. 52208 mar. >>b. 52208 mar. >>b. 54005 mar. >> 54007	309 49596 571 51829 838 52203 208 53632 673 54137 145 54903 905 56056 587 57114 107 57646 715 59334 371 60480 182 62425 139 62888	-	39 Uncharacterized protein C315R 39	African swine fever virus	Asfarviridae (NCLDV)	P0CAD6.1	149	93%	2.00E-40	31.88
mart and 1588 mart and		-	 52 BA71V-B962L 54 Dalinked sulfinger (set 4) 	African swine fever virus	Asfarviridae (NCLDV)	AJL34086.1	624	98%	0	45.21
mit - 0 -0.41-6 Mit - 0 -0.41-7 Mit - 0 <			21 FALF-linked surnydryl oxidase (p14) 74 54	African swine rever virus	Astarviridae (NCLDV)	Q90FM9.1	ab.7	/9%	3.00E-21	45.75
NBE-63 58071 NBE-64 58877 NBE-64 58877 NBE-65 58877 NBE-66 58877 NBE-67 57107 NBE-68 58877 NBE-68 58877 NBE-68 58877 NBE-78 64322 NBE-77 64224 NBE-78 6537 NBE-77 64224 NBE-77 70825 NBE-77 70825 NBE-77 70825 NBE-78 70755 NBE-78 70825 NBE-78 70755 NBE-79 70757 NBE-79 70757 NBE-79 70827 NBE-79 70827 NBE-79 70827	071 56556 587 57114 107 57646 715 59334 371 60480 482 62425 139 62888		 hypothetical protein D5b_00348 B354L 	Faustovirus African swine fever virus	Asfaviridae ? (NCLDV) Asfarviridae (NCLDV)	AMN83769.1 AX795853.1	111 271	88% 98%	1.00E-26 1.00E-86	31.14
NRE-65 97107 NRE-65 97107 NRE-67 97107 NRE-67 97107 NRE-67 97107 NRE-67 97107 NRE-67 97107 NRE-67 97107 NRE-70 62307 NRE-70 62307 NRE-70 74237 NRE-74 85611 NRE-74 85611 NRE-74 85611 NRE-74 96231 NRE-74 96231 NRE-74 96231 NRE-74 96231 <td>107 57646 715 59334 371 60480 482 62425 139 62888</td> <td></td> <td>61 75</td> <td></td> <td></td> <td></td> <td></td> <td>2070</td> <td></td> <td></td>	107 57646 715 59334 371 60480 482 62425 139 62888		61 75					2070		
SRE-67 99711 SRE-68 6462 SRE-68 6462 SRE-68 6462 SRE-76 6462 SRE-76 6462 SRE-76 6462 SRE-76 7462 SRE-76 74762 SRE-78 9471 SRE-78 9471 SRE-78 9471 SRE-79 9461 SRE-79 9471 SRE-70 9472 SRE-74 9477 SRE-74	371 60480 482 62425 439 62888		79 39 BA71V-B602L (9RL)	African swine fever virus	Asfarviridae (NCLDV)	AJL34093.1	240	97%	9.00E-71	29.53
DRE-60 6.2339 DRE-60 6.2349 DRE-70 6.2061 DRE-70 6.2061 DRE-71 6.5761 DRE-72 6.5871 DRE-73 6.5771 DRE-74 6.5762 DRE-75 6.5821 DRE-76 70823 DRE-77 70823 DRE-78 70824 DRE-79 70824 DRE-79 70827 DRE-78 70827 DRE-78 70824 DRE-78 90821 DRE-78 90821 DRE-79 90821 DRE-70 90821 DRE-70 90821 DRE-70 90821 DRE-70 90821 DRE-70 90821	439 62888	+	69 Zinc finger protein B385R 47 major capsid protein p72	African swine fever virus African swine fever virus	Asfarviridae (NCLDV) Asfarviridae (NCLDV)	Q8V9S7.1 AAT84439.1	244 583	93% 99%	6.00E-76 0	39.89 44.99
NR-71 64/21 NR-71 64/21 NR-72 64/21 NR-74 64/21 NR-74 64/21 NR-74 64/21 NR-75 70289 NR-76 70287 NR-76 70277 NR-76 <td>/06 64078</td> <td>1</td> <td>49 90 Hypothetical protein PACV_238</td> <td>Pacmanvirus A23</td> <td>Asfaviridae ? (NCLDV)</td> <td>YP_009361587.1</td> <td>137</td> <td>91%</td> <td>4.00E-35</td> <td>28.49</td>	/06 64078	1	49 90 Hypothetical protein PACV_238	Pacmanvirus A23	Asfaviridae ? (NCLDV)	YP_009361587.1	137	91%	4.00E-35	28.49
RH:73 65397 RH:73 65397 RH:74 65397 RH:74 65397 RH:74 65397 RH:74 65397 RH:74 65397 RH:75 7427 RH:74 65397 RH:74 65319 RH:74 65397 RH:74 65397 RH:74 65397 RH:74 <td>121 64741 824 65612</td> <td>÷</td> <td>06 BA71V-B175L 62 B263R</td> <td>African swine fever virus African swine fever virus</td> <td>Asfarviridae (NCLDV) Asfarviridae (NCLDV)</td> <td>AJL34264.1 AXZ95861.1</td> <td>97.1 171</td> <td>83% 98%</td> <td>1.00E-23 1.00E-50</td> <td>31.40 40.91</td>	121 64741 824 65612	÷	06 BA71V-B175L 62 B263R	African swine fever virus African swine fever virus	Asfarviridae (NCLDV) Asfarviridae (NCLDV)	AJL34264.1 AXZ95861.1	97.1 171	83% 98%	1.00E-23 1.00E-50	31.40 40.91
DEF:15 Oraging DEF:15 Oraging DEF:17 Te255 DEF:18 DEF:16 DEF:18 DEF:16 DEF:24 SE344 DEF:24 DEF:24 DEF:24 DEF	397 65941 964 70244	1	14 126 BA71V-B175L	African swine fever virus	Asfarviridae (NCLDV)	AJI.34102.1	770	99%	0	34.52
JBH 1-70 75265 JBH 1-70 75565 JBR 1-70 75565 JBR 2-80 75077 JBR 2-81 85547 JBR 2-84 80677 JBR 2-86 80711 JBR 2-86 80711 JBR 2-86 80712	289 70861 882 74226	++	90 hypothetical protein D6_00329 14 DNA polymerase beta	Faustovirus African swine fever virus	Asfaviridae ? (NCLDV) Asfarviridae (NCLDV)	AMN84731.1 P0C972.1	120 748	91% 96%	2.00E-32 0	37.56 39.60
3.871-30 7.9007 3.871-30 7.9007 3.871-32 3.872-41 3.872-42 3.8627 3.872-43 3.8627 3.872-44 3.8627 3.872-44 3.8627 3.872-44 3.8627 3.872-44 3.8667 3.872-44 8.8667 3.872-44 8.8667 3.872-44 8.8667 3.872-44 8.8667 3.872-45 9.8261 3.872-46 9.8261 3.872-46 9.8261 3.872-47 9.8261 3.872-48 9.8261 3.872-49 9.8261 3.872-49 9.8261 3.872-49 9.8271 3.872-49 9.8272 3.872-49 9.8272 3.872-49 9.8272 3.872-49 9.8272 3.872-49 9.8272 3.872-49 9.8272 3.872-49 9.8272 3.872-44 9.9372 3.872-44	257 74790 785 75675	-	7/ 96 putative ubiquitin carboxyl-terminal hydrolase 2-like	Harvfovirus sp.	Mimiviridae (NCLDV)	AYV80395.1	55.1	86%	8.00E-07	23.88
NRF-32 85/284 NRF-32 85/284 NRF-34 95/284 NRF-34 95/284 NRF-34 95/275 NRF-34 97/275 NRF-34 97/276 NRF-144 102/278 NRF-144 102/278 NRF-144 102/278 NRF-144	300 75904 907 83604 681 85270	-	65 CP2475L (p220) 9 60 EDa polyarotain	African swine fever virus African swine fever virus	Asfarviridae (NCLDV) Asfarviridae (NCLDV)	AXZ95866.1	981 325	99% 95%	0 1.00E-103	29.29
NRF-84 Seeder NRF-84 Seeder NRF-85 Seeder NRF-85 Seeder NRF-86 Seeder NRF-87 Seeder NRF-87 Seeder NRF-87 Seeder NRF-88 Seeder NRF-89 Seeder NRF-80	284 85535 547 86647	+	 Putative DNA-directed RNA polymerase subunit 10 homolo 6 CP312P 	g African swine fever virus	Asfarviridae (NCLDV) Asfarviridae (NCLDV)	P0C979.1	69.7	100%	1.00E-15 4.00E-35	42.86
DRE-86 0.2512 DRE-86 0.2512 DRE-87 0.442 DRE-87 0.442 DRE-87 0.442 DRE-86 0.9611 DRE-86 0.9611 DRE-87 0.9611 DRE-86 0.9621 DRE-86 0.9621 DRE-87 0.9621 DRE-87 0.9622 DRE-86 0.9622 DRE-86 0.9622 DRE-87 0.9623 DRE-86 0.9622 DRE-87 0.9623 DRE-86 0.9622 DRE-87 0.9623 DRE-86 0.9623 DRE-86 0.9623 DRE-86 0.9623 DRE-86 0.9623 DRE-86 0.9624 DRE-86	567 91013 071 92453		 Probable DNA-directed RNA polymerase subunit 1 homolog Chain A, DNA ligase 	African swine fever virus African swine fever virus	Asfarviridae (NCLDV) Asfarviridae (NCLDV)	P0C988.1 AXZ95874.1	1637 256	99% 92%	0 4.00E-79	53.96
BRE-88 94588 DRE-88 94588 DRE-84 94581 DRE-94 95217 DRE-94 95217 DRE-94 95221 DRE-94 95221 DRE-94 95222 DRE-94 95224 DRE-94 9524 DRE-94 9524 DRE-94 9524 DRE-94 9524 DRE-94 9525 DRE-94 9525	512 93390 442 94488	1	92 48							
DEF-00 984511 DEF-01 194524 DEF-10 194524 DEF-10 194524 DEF-10 194524 DEF-10 194544 DEF-11	588 95010 041 95601	-	40 86							
3.88-9.9 9.82/21 3.88-9.9 9.82/21 3.87-9.5 9.82/21 3.87-9.5 9.82/21 3.87-9.5 9.82/21 3.87-9.5 9.82/21 3.87-9.7 9.82/21 3.87-9.7 9.82/21 3.87-9 9.82/21 3.87-9 9.82/21 3.87-9 9.82/21 3.87-9 9.82/21 3.87-9 9.82/21 3.87-9 9.82/21 3.87-10 10.82/21 3.87-10 10.82/21 3.87-11 10.82/21 3.87-11 10.82/21 3.87-11 10.82/21 3.87-11 10.82/21 3.87-11 10.82/21 3.87-11 10.82/21 3.87-11 10.82/21 3.87-11 10.82/21 3.87-11 10.82/21 3.87-11 10.82/21 3.87-11 10.82/21 3.87-11 10.82/21 3.87-11 10.82/21 3.87-	247 96498	-	3							
NRF-95 97755 NRF-95 97825 NRF-97 97827 NRF-97 97827 NRF-97 97827 NRF-97 97821 NRF-97 97821 NRF-107 100251 NRF-107 100251 NRF-107 100254 NRF-108 100274 NRF-100 100378 NRF-100 100378 NRF-100 100378 NRF-100 100378 NRF-100 100378 NRF-100 100378 NRF-110 110368 NRF-111 112368 NRF-111 112368 NRF-111 112368 NRF-111 112368 NRF-121 113368 NRF-121 11336 NRF-122 117078 NRF-123 113368 NRF-124 113378 NRF-124 113378 NRF-124 113378 NRF-124 113378 <t< td=""><td>727 97017</td><td></td><td>26 62</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	727 97017		26 62							
NRF-07 98470 NRF-08 98711 NRF-101 100788 NRF-101 100505 NRF-101 100505 NRF-101 100505 NRF-111 110864 NRF-1111 110864 <tr< td=""><td>575 98027 082 98441</td><td>÷</td><td>50 19</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr<>	575 98027 082 98441	÷	50 19							
NRF-99 998311 NRF-100 10022781 NRF-102 10022781 NRF-102 1002481 NRF-102 1003481 NRF-104 1003786 NRF-104 1003786 NRF-104 1003786 NRF-104 1003786 NRF-104 1003786 NRF-107 1003953 NRF-108 1006438 NRF-101 1005903 NRF-110 1005643 NRF-111 110254 NRF-111 110350 NRF-111 113514 NRF-112 113700 NRF-113 113514 NRF-114 113549 NRF-121 116336 NRF-121 116336 NRF-121 116336 NRF-121 116336 NRF-121 116335 NRF-121 124951 NRF-122 124951 NRF-124 124951 NRF-127 124279	470 98766 761 99768	+	98 35							
RF-101 100788 RF-101 100786 RF-104 103786 RF-104 103786 RF-104 103786 RF-105 105662 RF-106 105893 RF-107 106385 RF-108 106385 RF-109 106325 RF-101 106385 RF-111 110841 RF-111 110841 RF-111 110841 RF-111 110841 RF-111 11381 RF-111 11351 RF-111 11351 RF-112 11351 RF-113 11351 RF-124 113700 RF-125 110497 RF-124 113704 RF-125 110497 RF-124 12386 RF-125 124931 RF-124 124931 RF-125 124931 RF-124 124931	831 100247 0251 100697	7 + 7 -	38 48							
MEF-104 102/36 MEF-105 105562 1 MEF-106 105862 1 MEF-107 106395 1 MEF-108 106395 1 MEF-109 106395 1 MEF-109 106395 1 MEF-110 106395 1 MEF-111 110240 1 MEF-111 110240 1 MEF-113 112168 1 MEF-113 112168 1 MEF-114 11370 1 MEF-115 113151 1 MEF-115 113151 1 MEF-120 115336 1 MEF-121 113706 1 MEF-122 113706 1 MEF-124 113706	798 102825 3488 103751	5 +	75							
MRF-106 1002633 MRF-107 1065385 MRF-108 1065385 MRF-108 1065259 MRF-101 1005259 MRF-101 1005259 MRF-111 110254-0 MRF-111 110254-0 MRF-114 112168-0 MRF-115 113151-0 MRF-116 113150-0 MRF-117 113360-0 MRF-118 113790-0 MRF-119 113340-0 MRF-119 113340-0 MRF-119 113340-0 MRF-119 113340-0 MRF-121 113540-0 MRF-121 113540-0 MRF-121 113540-0 MRF-121 113540-0 MRF-122 113700-0 MRF-123 120409-0 MRF-124 120409-0 MRF-125 120409-0 MRF-126 122779	786 104781 1796 105665	1 + 5 +	31 89 Transcription factor S-II-related protein	African swine fever virus	Asfarviridae (NCLDV)	P0C8F8.1	123	67%	7.00E-32	39.30
HRF-108 105235 HRF-101 105259 HRF-101 105259 HRF-111 10254 HRF-112 112581 HRF-113 1121681 HRF-114 112581 HRF-115 1121681 HRF-118 1143700 HRF-119 115349 HRF-119 115349 HRF-121 115356 HRF-121 115376 HRF-121 115384 HRF-122 115876 HRF-122 115876 HRF-122 128785 HRF-122 129871 HRF-122 129871 HRF-122 129871 HRF-122 129871 HRF-124 129871 HRF-125 122779 HRF-126 122779	393 106333 395 106610	 3 + 0 +	46 1							
RF-110 109660 RF-111 10051 RF-112 110861 RF-113 12168 RF-114 11286 RF-115 113161 RF-116 113151 RF-117 114370 RF-118 114370 RF-119 115349 RF-121 116336 RF-121 118785 RF-122 118785 RF-124 119305 RF-125 120409 RF-124 12371 RF-124 124731 RF-124 124731 RF-125 120409 RF-126 122779 RF-128 122779	638 108146 3259 109539	6 + 9 +	02 hypothetical protein BpV2_110c 26 hypothetical protein Hokovirus 3 43	Bathycoccus sp. RCC1105 virus BpV2 Hokovirus HKV1	Phycodnaviridae (NCLDV) Mimiviridae (NCLDV)	ADQ91277.1 ARF10770.1	137 94.7	92% 53%	1.00E-33 1.00E-04	24.03 24.66
RF-112 110861 RF-113 112168 RF-114 112586 RF-114 112586 RF-116 113790 RF-116 113790 RF-118 114970 RF-118 114970 RF-120 116336 RF-121 118364 RF-122 118366 RF-122 118375 RF-124 119305 RF-125 120409 RF-126 121953 RF-127 12875 RF-128 1257770 RF-128 1257770 RF-128 1257770	669 110100 0254 110820	0 + 0 -	43					/0		
RF-114 112586 RF-115 113151 RF-116 113790 RF-117 114370 RF-118 114970 RF-119 115349 RF-119 115349 RF-121 116336 RF-121 116336 RF-122 118366 RF-123 118785 RF-124 119305 RF-125 120409 RF-126 120531 RF-127 124951 RF-128 125779 RF-129 126279 RF-129 126279 RF-129 126279	861 112117 168 112581	7 + 1 +	18 37							
mrc-116 113790 113790 RF-117 114370 1 RF-118 114970 1 RF-119 115349 1 RF-120 116336 1 RF-121 117708 1 RF-122 118366 1 RF-123 118785 1 RF-124 119305 1 RF-125 120409 1 RF-125 120495 1 RF-127 124953 1 RF-128 125779 1 RF-129 126279 1 RF-129 126279 1	.586 113095 151 113747	5 - 7 -	69 98		10-11 - 1-1				c 0	
nr118 1149/01 RF-119 115349 RF-120 116336 1RF-121 117708 RF-121 118366 RF-123 118785 RF-124 119305 RF-124 119305 RF-124 119305 RF-125 120409 RF-126 121953 RF-127 124951 RF-128 125779 RF-129 1262799 RF-129 1262779 RF-129 126279 RF-129 126279	/90 114314 1370 114939	• • • +	 /4 dU11' diphosphatase 89 E199L 20 Understand matrix E11'' 	Pithovirus LCPAC101 African swine fever virus	Pithoviridae (NCLDV) Asfarviridae (NCLDV)	QBK90048.1 AZP54233.1	73.6	84% 59%	6.00E-15 5.00E-14	35.48
RF-121 110330 1 RF-121 117708 1 RF-122 118366 1 RF-123 118785 1 RF-124 119305 1 RF-125 120409 1 RF-126 121933 1 RF-127 124951 1 RF-128 125779 1 RF-129 126279 1 RF-129 126279 1	349 116317	· + 7 -	20 Uncharacterized protein E146L 22 Uncharacterized protein E301R 47	African swine fever virus African swine fever virus	Astarviridae (NCLDV) Asfarviridae (NCLDV)	Q65239.2	48.5	8.5% 87%	3.00E-06 1.00E-74	30.77 45.26
RF-123 118785 1 RF-124 119305 1 RF-125 120409 1 RF-126 121953 1 RF-127 124951 1 RF-128 125779 1 RF-129 126279 1 RF-129 127476 1	708 118328	s + s +	06							
RF-125 120409 1 RF-126 121953 1 RF-127 124951 1 RF-128 125779 1 RF-129 126279 1 RF-120 127424 1	785 119348 305 120405	8 + 5 -	87 66 Cysteine desulfurase NifS	Pacmanvirus A23	Asfaviridae ? (NCLDV)	YP_009361727.1	125	73%	1.00E-30	31.83
RF-127 124951 1 RF-128 125779 1 RF-129 126279 1	409 121917 1953 124970	7 - 0 +	02 Chain A, Major Capsid Protein 105 helicase Q706	Faustovirus African swine fever virus	Asfaviridae ? (NCLDV) Asfarviridae (NCLDV)	5J7O_A NP_042814.1	201 596	99% 67%	1.00E-55 5.00E-110	25.19 46.53
RF-129 126279 1	951 125757 5779 126252	7 - 2 -	68 pH240R 57 Hypothetical protein PACV_339	African swine fever virus Pacmanvirus A23	Asfarviridae (NCLDV)	NP_042812.1 YP_009361686.1	69.3 42.7	95% 28%	5.00E-12 0.001	26.64 42.22
KF=130 127430 1	279 127400 7436 127864	D - 4 -	73 pH339R 42	African swine fever virus	Asfarviridae (NCLDV)	Q65232.1	181	89%	3.00E-52	33.63
RF-131 127906 1 RF-132 128242 1	906 128199 \$242 129423	9 - 3 +	93 RNA polymerase subunit 3	African swine fever virus	Asfarviridae (NCLDV)	NP_042806.1	162	98%	2.00E-44	29.67
RF-135 129413 1 RF-134 132955 1	413 132922 2955 133062	2 -	by DNA topoisomerase 2 5 6 Contains meterose \$2728	African swine fever virus	Astarviridae (NCLDV)	AJL34125.1	976	99%	0	43.36
RF-135 133071 1 RF-136 133974 1	0/1 133961	1 - 7 +	yo Cysteine protease SZ/3R Uncharacterized netwine D2461	African swine fever virus	Astarvaridae (NCLDV)	P0C9B7.1	244	95%	2.00E-78	43.21
RF-138 136332 1 RF-139 136717	99/4 134597	, + 0 + 5 ±	27 One-matacterized protein 125451. 12 50	An earl swine rever virus	Asiai viriuač (NULDV)	Q03223.2	127	90%	3.00E-32	27.94
RF-140 136905 1 RF-141 137084	39/4 134597 1606 135619 1332 136670 713 136865	- + 5 + 9 +		African swine fever virus	Asfarviridae (NCLDV)	AJL34119.1	1007	99%	0	45 91
RF-142 140603 1 RF-143 141570 1	99/4 134597 1606 135619 332 136670 713 136865 905 137075 084 140560	4 + 2 +	13 BA71V-D339L (g9L) 60	African swine fever virus	Asfarviridae (NCLDV)	AJL34283.1	91.3	65%	5.00E-19	30.48
RF-144 141841 1 RF-145 142446 1	397/4 134597 4606 135619 332 136670 3713 136865 3905 137075 '084 140569 '603 141544 570 141812	4 + 5 +	97 69							
RF-146 142935 1 RF-147 143957 1	397/4 134597 4606 135619 332 136670 5713 136865 3905 137075 9084 140569 1603 141544 570 141812 841 142434 446 142955	6 - 2 +	13 mRNA-decapping protein g5R 71	African swine fever virus	Asfarviridae (NCLDV)	Q65217.1	84.7	76%	3.00E=17	25.82
RF-148 144639 1 RF-149 145374 1	39/4 134597 4606 135619 5332 136670 5713 136865 3905 137075 7084 140569 9051 141544 570 141812 841 142434 4466 142955 9351 143876 9571 144472	0 + 2 +	33 42							
RF-150 146130 1 RF-151 146891 1	>y/4 134597 4606 135619 332 136670 i713 13685 i905 137075 1063 141544 i570 141812 841 142355 i935 143876 i935 143876 i937 144512 639 145340	0 + 6 +	46							
RF-152 147355 1 RF-153 148274 1	>y/4 134597 6406 135619 6332 136670 6332 136670 905 137075 905 137075 9063 141544 1570 141812 841 142434 142955 143876 9957 143876 9957 144324 145340 374 1639 145340 130 146870 891 147316	2 + 8 +	95							
RF-155 149356 1	>>/4 134597 134597 136670 5332 136670 5332 136670 5332 136670 5051 137075 5005 137075 50031 141544 1570 141812 18841 142354 143876 143876 957 144472 1639 145340 1374 146102 1301 146870 891 147316 355 143876 274 14822 274 14822		51 59 58							
RF-150 149868 1 RF-157 150337 1	>>/4 134597 \$406 135619 \$6332 136670 \$6713 136865 \$6713 136865 \$60513 136867 \$60513 136867 \$60513 136867 \$60513 140569 \$60514 141524 \$44444 142434 \$4446 142955 \$935 143876 \$637 145340 \$143876 143876 \$937 144472 \$143876 143876 \$1374 146102 \$1374 146102 \$1374 1468102 \$143876 147316 \$891 147316 \$851 149835 \$858 1498438 \$858 1498438 \$858 1498438 \$864 \$77575	3 + 5 +	23 pNP868R guanylyltransferase 44 tail fiber protein	African swine fever virus	Asfarviridae (NCLDV) Monviridae	AIY22450.1	464	96%	3.00E-149	34.63
RF-159 152849 1 RF-159 154819 1	yyya 134597 134597 136670 136670 136675 136713 136865 137075 137075 137075 141544 14544 142354 1570 141812 1841 142344 142344 142354 143935 143876 143935 144372 1301 146870 1301 146870 1301 144542 1301 144543 1355 144242 14314 146102 1301 146870 14812 14314 1305 148242 1355 148242 147316 149835 356 149833 368 150344 337 152808 349 152804	3 + 5 + 4 + 8 -	20	synechococcus pnage S-1328	myovifidae	Q4P05809.1	295	48%	5.00E-14	38.57