

Table S1. Primers used for PPV1-7 detection in this study.

Virus	Primer	Sequence (5'-3')	Location*	Size (bp)*	Gene
PPV1	PPV1-F1	CACAAGAAAAGGTTATCACCAAACAA	3571-3596	109	VP2
	PPV1-R1	GGAGTATTCAAATTCATGTATGGTGTATT	3650-3679		
PPV2	PPV2-F1	CACGATGAGCGGTACGACGA	3173-3192	273	VP2
	PPV2-R1	ACGAGGTCTCTTCTGGGACTCCT	3423-3445		
PPV3	PPV3-F1	CAGTCTGCGCTTAACTTAGGTGATT	2555-2579	390	VP1
	PPV3-R1	TGCTTCATCCACTGGTCCCTTA	2923-2944		
PPV4	PPV4-F1	CTTTGCTTTGTCCAACGCAGA	3563-3583	488	VP2
	PPV4-R1	TAGATGTCCTGGCACAGATACTTGAC	4025-4050		
PPV5	PPV5-F1	CTTTGGTGTTGAGGGACTTAGCTTT	429-453	595	NS1
	PPV5-R1	CATGCTCCAGTGAAACATTATAACTGC	997-1023		
PPV6	PPV6-F1	AGGTTGATTCAGGGCAAATTCATA	4900-4923	689	VP2
	PPV6-R1	CCATATTGATTGATGAAGGTCTGACC	5563-5588		
PPV7	PPV7-F1	TGGTCCATGCAAGACAACGC	1308-1327	795	NS1
	PPV7-R1	GCTTGCGCAGCGTCGAT	2086-2102		

\* The location and size of each amplicon were determined according to PPV1 HNLY201301 (MF447833) strain, PPV2 GX (KU745627) isolate, PPV3 GX1 (KU167028) isolate, PPV4 JS0918a (HM031134) strain, PPV5 HN01 (KF661535) isolate, PPV6 FJ2017 (MG760726) strain, and PPV7 GX49 (NC\_040562) isolate, respectively.

Table S2. Distribution of PPV1-7 in 435 samples from eight provinces of China.

Province	Numbers	PPV1	PPV2	PPV3	PPV4	PPV5	PPV6	PPV7
Jiangsu	115*	+	+	+	+	+	+	+
Shandong	99	+	+	+	+	+	+	+
Fujian	71	+	+	+	+	+	+	+
Anhui	46	+	+	+	-	+	+	+
Xinjiang	32	+	+	+	-	+	+	+
Guangdong	28	+	+	+	+	+	-	-
Henan	39	+	+	-	-	+	-	+
Hebei	5	+	+	+	-	-	-	+

\* The numbers indicated the numbers of samples collected from each province.

Table S3. Clinical sample infection status

Sample	Age	Region	Year	PPV1	PPV2	PPV3	PPV4	PPV5	PPV6	PPV7	PCV2
1	Suckling	Xiamen, Fujian	2016								
2	Suckling	Xiamen, Fujian	2016								+
3	Suckling	Xiamen, Fujian	2016								
7	Suckling	Xiamen, Fujian	2016								+
8	Suckling	Xiamen, Fujian	2016								+
9	Suckling	Xiamen, Fujian	2016								+
10	Suckling	Xiamen, Fujian	2016								
11	Suckling	Xiamen, Fujian	2016								+
12	Suckling	Xiamen, Fujian	2016								
13	Suckling	Xiamen, Fujian	2016								
14	Nursery	Yangzhou, Jiangsu	2016								
15	Nursery	Zhenjiang, Jiangsu	2016			+					+
16	Nursery	Yangzhou, Jiangsu	2016								+
17	Nursery	Yangzhou, Jiangsu	2016	+							+
18	Nursery	Yangzhou, Jiangsu	2016								+
20	Nursery	Yangzhou, Jiangsu	2017	+						+	+
21	Nursery	Yangzhou, Jiangsu	2017		+						
22	Nursery	Yangzhou, Jiangsu	2017		+					+	+
23	Nursery	Weifang, Shandong	2017							+	+
24	Nursery	Weifang, Shandong	2017								+
25	Nursery	Yangzhou, Jiangsu	2017		+						+
26	Nursery	Yangzhou, Jiangsu	2017								+
27	Nursery	Tianchang, Anhui	2017								+
28	Nursery	Tianchang, Anhui	2017								+
29	Suckling	Yangzhou, Jiangsu	2017	+							+
30	Nursery	Yangzhou, Jiangsu	2017	+							+
31	Nursery	Yangzhou, Jiangsu	2017								+
32	Nursery	Yangzhou, Jiangsu	2017								+
33	Nursery	Yangzhou, Jiangsu	2017		+						
46	Nursery	Weifang, Shandong	2017								+
47	Nursery	Weifang, Shandong	2017		+						+





374	Suckling	Yangzhou, Jiangsu	2018					
375	Nursery	Yangzhou, Jiangsu	2018	+				
376	Nursery	Yangzhou, Jiangsu	2018					
377	Nursery	Yangzhou, Jiangsu	2018		+		+	+
378	Nursery	Yangzhou, Jiangsu	2018		+		+	
379	Nursery	Yangzhou, Jiangsu	2018		+		+	+
428	Suckling	Yangzhou, Jiangsu	2018					
429	Suckling	Yangzhou, Jiangsu	2018					
430	Suckling	Yangzhou, Jiangsu	2018					
431	Suckling	Taizhou, Jiangsu	2018		+	+	+	+
432	Suckling	Nantong, Jiangsu	2018					
658	Nursery	Yangzhou, Jiangsu	2018	+				
659	Nursery	Yangzhou, Jiangsu	2019		+	+	+	
660	Nursery	Yangzhou, Jiangsu	2019					+
661	Nursery	Nantong, Jiangsu	2019					
662	Nursery	Yangzhou, Jiangsu	2019					
663	Nursery	Yangzhou, Jiangsu	2019					+
664	Nursery	Taizhou, Jiangsu	2019					+
665	Nursery	Yangzhou, Jiangsu	2019					+
666	Nursery	Tianchang, Anhui	2019					+
668	Nursery	Tianchang, Anhui	2019					+
708	Nursery	Yangzhou, Jiangsu	2019					
709	Nursery	Yangzhou, Jiangsu	2019					+
710	Nursery	Yangzhou, Jiangsu	2019					
711	Nursery	Yangzhou, Jiangsu	2019					
712	Nursery	Huaian, Jiangsu	2019					+
713	Nursery	Nantong, Jiangsu	2019					
717	Nursery	Yangzhou, Jiangsu	2019	+	+		+	+
718	Nursery	Yancheng, Jiangsu	2019					
720	Nursery	Taizhou, Jiangsu	2019					
733	Finishing	Liaocheng, Shandong	2020					
734	Finishing	Liaocheng, Shandong	2020					

735	Finishing	Liaocheng, Shandong	2020						
736	Finishing	Liaocheng, Shandong	2020						
737	Finishing	Liaocheng, Shandong	2020			+			
738	Finishing	Liaocheng, Shandong	2020						
739	Finishing	Liaocheng, Shandong	2020						
740	Finishing	Liaocheng, Shandong	2020			+			
741	Finishing	Liaocheng, Shandong	2020						
742	Finishing	Liaocheng, Shandong	2020					+	
743	Finishing	Liaocheng, Shandong	2020						
744	Finishing	Liaocheng, Shandong	2020						
745	Finishing	Liaocheng, Shandong	2020						+
746	Finishing	Liaocheng, Shandong	2020						
747	Finishing	Liaocheng, Shandong	2020						
748	Finishing	Liaocheng, Shandong	2020						
749	Finishing	Liaocheng, Shandong	2020						
750	Finishing	Liaocheng, Shandong	2020	+					
751	Finishing	Liaocheng, Shandong	2020					+	
752	Finishing	Liaocheng, Shandong	2020						
774	Finishing	Fuyang, Anhui	2020						
775	Finishing	Fuyang, Anhui	2020					+	+
776	Finishing	Fuyang, Anhui	2020	+		+			
777	Finishing	Fuyang, Anhui	2020	+					+
778	Finishing	Fuyang, Anhui	2020	+					
779	Finishing	Fuyang, Anhui	2020						
780	Finishing	Fuyang, Anhui	2020						
781	Finishing	Fuyang, Anhui	2020						
782	Finishing	Fuyang, Anhui	2020					+	
783	Finishing	Fuyang, Anhui	2020						+
784	Finishing	Fuyang, Anhui	2020						
785	Finishing	Fuyang, Anhui	2020						
786	Finishing	Fuyang, Anhui	2020	+		+			
787	Finishing	Fuyang, Anhui	2020						+
788	Finishing	Fuyang, Anhui	2020	+					
789	Finishing	Fuyang, Anhui	2020	+					+

790	Finishing	Fuyang, Anhui	2020	+	+			+				+
791	Finishing	Fuyang, Anhui	2020	+	+							+
792	Finishing	Fuyang, Anhui	2020	+								+
793	Finishing	Fuyang, Anhui	2020		+			+				+
794	Finishing	Fuyang, Anhui	2020									
795	Finishing	Fuyang, Anhui	2020									
796	Finishing	Fuyang, Anhui	2020									
797	Finishing	Fuyang, Anhui	2020									+
798	Finishing	Fuyang, Anhui	2020									+
799	Finishing	Fuyang, Anhui	2020			+			+			+
800	Finishing	Fuyang, Anhui	2020			+		+				+
801	Finishing	Fuyang, Anhui	2020			+		+				
802	Finishing	Fuyang, Anhui	2020			+		+		+	+	+
803	Finishing	Fuyang, Anhui	2020			+		+				
804	Finishing	Fuyang, Anhui	2020			+		+				
805	Finishing	Fuyang, Anhui	2020			+		+		+		
806	Finishing	Fuyang, Anhui	2020			+		+				+
807	Finishing	Fuyang, Anhui	2020			+						
808	Finishing	Fuyang, Anhui	2020	+	+							
809	Finishing	Fuyang, Anhui	2020									+
810	Finishing	Fuyang, Anhui	2020	+								
811	Finishing	Fuyang, Anhui	2020	+								+
812	Finishing	Fuyang, Anhui	2020			+				+		
813	Finishing	Fuyang, Anhui	2020			+				+		
814	Finishing	Qingdao, Shandong	2020									+
815	Finishing	Qingdao, Shandong	2020									+
816	Finishing	Qingdao, Shandong	2020	+								
817	Finishing	Qingdao, Shandong	2020									
818	Finishing	Qingdao, Shandong	2020	+								
819	Finishing	Qingdao, Shandong	2020									
820	Finishing	Qingdao, Shandong	2020								+	
821	Finishing	Qingdao, Shandong	2020									
822	Finishing	Qingdao, Shandong	2020									
823	Finishing	Qingdao, Shandong	2020			+						



824	Finishing	Qingdao, Shandong	2020		+				
825	Finishing	Qingdao, Shandong	2020		+				
826	Finishing	Qingdao, Shandong	2020						
827	Finishing	Qingdao, Shandong	2020		+				
828	Finishing	Qingdao, Shandong	2020						
829	Finishing	Qingdao, Shandong	2020		+		+		
830	Finishing	Qingdao, Shandong	2020	+	+				
831	Finishing	Qingdao, Shandong	2020		+				
832	Finishing	Qingdao, Shandong	2020						
833	Finishing	Qingdao, Shandong	2020					+	
834	Finishing	Nanjing, Jiangsu	2020						+
835	Finishing	Nanjing, Jiangsu	2020						
836	Finishing	Nanjing, Jiangsu	2020						
837	Finishing	Nanjing, Jiangsu	2020						
838	Finishing	Nanjing, Jiangsu	2020					+	
839	Finishing	Nanjing, Jiangsu	2020					+	
840	Finishing	Nanjing, Jiangsu	2020					+	
841	Finishing	Nanjing, Jiangsu	2020		+			+	
842	Finishing	Nanjing, Jiangsu	2020	+	+			+	
843	Finishing	Nanjing, Jiangsu	2020	+					
844	Finishing	Nanjing, Jiangsu	2020	+	+				
845	Finishing	Nanjing, Jiangsu	2020						
846	Finishing	Nanjing, Jiangsu	2020						
847	Finishing	Nanjing, Jiangsu	2020		+			+	
848	Finishing	Nanjing, Jiangsu	2020	+					
849	Finishing	Nanjing, Jiangsu	2020	+					
850	Finishing	Nanjing, Jiangsu	2020	+				+	+
851	Finishing	Nanjing, Jiangsu	2020		+			+	
852	Finishing	Nanjing, Jiangsu	2020	+				+	
853	Finishing	Nanjing, Jiangsu	2020	+				+	+
874	Finishing	Chaozhou, Guangdong	2020						
875	Finishing	Chaozhou, Guangdong	2020						
876	Finishing	Chaozhou, Guangdong	2020						
877	Finishing	Chaozhou, Guangdong	2020				+	+	







1038	Finishing	Zibo, Shandong	2020					
1039	Finishing	Zibo, Shandong	2020					
1040	Finishing	Zibo, Shandong	2020					
1041	Finishing	Zibo, Shandong	2020					
1042	Finishing	Zibo, Shandong	2020	+				
1043	Finishing	Zibo, Shandong	2020	+				
1044	Finishing	Zibo, Shandong	2020	+				
1045	Finishing	Zibo, Shandong	2020	+				
1046	Finishing	Zibo, Shandong	2020	+				
1066	Finishing	Zhumadian, Henan	2020		+			+
1067	Finishing	Zhumadian, Henan	2020	+				
1068	Finishing	Zhumadian, Henan	2020					
1069	Finishing	Zhumadian, Henan	2020					
1070	Finishing	Zhumadian, Henan	2020					
1071	Finishing	Zhumadian, Henan	2020					
1072	Finishing	Zhumadian, Henan	2020					+
1073	Finishing	Zhumadian, Henan	2020					+
1074	Finishing	Zhumadian, Henan	2020					
1075	Finishing	Zhumadian, Henan	2020				+	+
1076	Finishing	Zhumadian, Henan	2020		+			
1077	Finishing	Zhumadian, Henan	2020					
1078	Finishing	Zhumadian, Henan	2020					
1079	Finishing	Zhumadian, Henan	2020					
1080	Finishing	Zhumadian, Henan	2020					
1081	Finishing	Zhumadian, Henan	2020					+
1082	Finishing	Zhumadian, Henan	2020		+		+	
1083	Finishing	Zhumadian, Henan	2020		+		+	+
1084	Finishing	Zhumadian, Henan	2020					+
1085	Finishing	Zhumadian, Henan	2020		+			+
1086	Finishing	Zhumadian, Henan	2020				+	
1087	Finishing	Zhumadian, Henan	2020		+			+
1088	Finishing	Zhumadian, Henan	2020	+				
1089	Finishing	Zhumadian, Henan	2020					
1090	Finishing	Zhumadian, Henan	2020					+

1091	Finishing	Zhumadian, Henan	2020	+			+	
1092	Finishing	Zhumadian, Henan	2020					
1093	Finishing	Zhumadian, Henan	2020					
1094	Finishing	Zhumadian, Henan	2020					
1095	Finishing	Zhumadian, Henan	2020					+
1096	Finishing	Zhumadian, Henan	2020					
1097	Finishing	Zhumadian, Henan	2020			+		
1098	Finishing	Zhumadian, Henan	2020					+
1099	Finishing	Zhumadian, Henan	2020			+		
1100	Finishing	Zhumadian, Henan	2020					+
1101	Finishing	Zhumadian, Henan	2020			+		
1102	Finishing	Zhumadian, Henan	2020			+		
1103	Finishing	Zhumadian, Henan	2020					
1104	Finishing	Zhumadian, Henan	2020			+		
1125	Finishing	Taizhou, Jiangsu	2020					
1126	Finishing	Taizhou, Jiangsu	2020					
1127	Finishing	Taizhou, Jiangsu	2020					
1128	Finishing	Taizhou, Jiangsu	2020					+
1129	Finishing	Taizhou, Jiangsu	2020					+
1130	Finishing	Taizhou, Jiangsu	2020			+		
1131	Finishing	Taizhou, Jiangsu	2020					+
1132	Finishing	Taizhou, Jiangsu	2020	+			+	
1133	Finishing	Taizhou, Jiangsu	2020					
1134	Finishing	Taizhou, Jiangsu	2020	+			+	+
1135	Finishing	Taizhou, Jiangsu	2020			+	+	
1136	Finishing	Taizhou, Jiangsu	2020	+		+		
1137	Finishing	Taizhou, Jiangsu	2020	+			+	
1138	Finishing	Taizhou, Jiangsu	2020	+				+
1139	Finishing	Taizhou, Jiangsu	2020					+
1140	Finishing	Taizhou, Jiangsu	2020				+	+
1141	Finishing	Taizhou, Jiangsu	2020				+	
1142	Finishing	Taizhou, Jiangsu	2020	+			+	
1143	Finishing	Taizhou, Jiangsu	2020					+
1144	Finishing	Taizhou, Jiangsu	2020				+	+

1200	Nursery	Kashi, Xinjiang	2020								
1201	Nursery	Kashi, Xinjiang	2020								
1202	Nursery	Kashi, Xinjiang	2020								
1203	Nursery	Kashi, Xinjiang	2020								
1204	Nursery	Kashi, Xinjiang	2020						+		
1205	Nursery	Kashi, Xinjiang	2020						+		
1206	Nursery	Kashi, Xinjiang	2020								
1207	Nursery	Kashi, Xinjiang	2020								
1208	Nursery	Kashi, Xinjiang	2020								
1209	Nursery	Kashi, Xinjiang	2020								
1210	Nursery	Kashi, Xinjiang	2020						+		
1211	Nursery	Kashi, Xinjiang	2020				+		+		
1212	Nursery	Kashi, Xinjiang	2020	+					+	+	
1213	Nursery	Kashi, Xinjiang	2020				+			+	
1214	Nursery	Kashi, Xinjiang	2020		+		+			+	
1215	Nursery	Kashi, Xinjiang	2020				+		+		
1216	Nursery	Kashi, Xinjiang	2020		+			+	+		
1217	Nursery	Kashi, Xinjiang	2020						+		
1218	Nursery	Kashi, Xinjiang	2020	+					+		
1219	Nursery	Kashi, Xinjiang	2020	+					+		
1220	Nursery	Kashi, Xinjiang	2020	+							
1221	Nursery	Kashi, Xinjiang	2020	+					+		
1222	Nursery	Kashi, Xinjiang	2020						+		
1223	Nursery	Kashi, Xinjiang	2020						+		
1224	Nursery	Kashi, Xinjiang	2020	+	+				+		
1225	Nursery	Kashi, Xinjiang	2020	+	+				+		
1226	Nursery	Kashi, Xinjiang	2020	+	+					+	
1227	Nursery	Kashi, Xinjiang	2020	+	+			+	+	+	
1228	Nursery	Kashi, Xinjiang	2020	+	+			+	+	+	
1229	Nursery	Kashi, Xinjiang	2020	+				+		+	
1230	Suckling	Hutubi, Xinjiang	2020	+						+	
1231	Nursery	Changji, Xinjiang	2020	+						+	
1232	Nursery	Yancheng, Jiangsu	2020								
435				70	98	98	19	40	17	67	166

Table S4. Cross-over event in PPV7 HBTZ20180519-152 strain identified by RDP4.

Recombined virus	Parental virus		Breakpoints*		Score for the seven detection methods embedded in RDP4 <sup>#</sup>						
	Major	Minor	Begin	End	RDP	GENECONV	BootScan	MaxChi	Chimaera	SiScan	3Seq
HBTZ20180519-152	JX15	JX38	600	1648	$9.4 \times 10^{-19}$	$3.2 \times 10^{-22}$	$5.4 \times 10^{-23}$	$6.7 \times 10^{-19}$	$6.3 \times 10^{-6}$	$7.0 \times 10^{-20}$	$1.2 \times 10^{-4}$

\* The breakpoints are based on the locations in the genome of PPV7 HBTZ20180519-152 strain.

<sup>#</sup>The *p* value cut-off is set at 0.05. *p*<0.05 indicates the cross-over events are significant.



1 **Supplementary figure legends**

2 **Figure S1.** Establishment of a new panel of PPV1 through PPV7 PCR assays.  
3 Corresponding amplicons of PPV1 through PPV7 could be specifically produced. M,  
4 DNA ladder; Neg, negative control.

5 **Figure S2.** The specificity of the panel of PPV1-7 PCR assays. Specific amplicons  
6 could be produced only when the corresponding PPV1 through PPV7 strains were  
7 detected. No amplicons could be generated when other pathogens were tested. The  
8 representative specificity results for each assay were shown. Lane 1, PPV1; lane 2,  
9 PPV2; lane 3, PPV3; lane 4, PPV4; lane 5, PPV5; lane 6, PPV6; lane 7, PPV7; lane 8,  
10 PCV1 JSNJ2004-913; lane 9, PCV2 JSYZ1705-32; lane 10, PCV3 SD17-36; lane 11,  
11 PCV4 JSYZ1901-2; lane 12, PRV XJ03; lane 13, PEDV XM2-4; lane 14, CSFV  
12 JS1805-2; lane 15, PRRSV1 HLJB1; lane 16, PRRSV2 SD17-38; lane 17, Negative  
13 control.

14 **Figure S3.** The sensitivity of the panel of PPV1-7 PCR assays. The positive control  
15 plasmid was diluted from  $1.8 \times 10^7$  copies/ $\mu\text{l}$  to  $1.8 \times 10^1$  copies/ $\mu\text{l}$ . The dilutions were  
16 used to determine the detection limits of each genotype of PPV PCR methods. The  
17 detection limits for PPV1-7 PCR assays are between  $1.8 \times 10^1$  copies/ $\mu\text{l}$  and  $1.8 \times 10^3$   
18 copies/ $\mu\text{l}$ .

19 **Figure S4.** The reproducibility of the panel of PPV1-7 PCR assays. The panel of  
20 PPV1-7 PCR assays was used to detection two concentrations ( $1.8 \times 10^5$  copies/ $\mu\text{l}$  and  
21  $1.8 \times 10^3$  copies/ $\mu\text{l}$ ) of the positive plasmid by two individuals. Specific amplicons  
22 could be generated using different concentrations by different operators.

23 **Figure S5.** Genome homology and variation distribution. Based on the comparison of  
24 our nearly complete PPV genomes and representative genomes of each genotype, the  
25 genome homologies of PPV1 through PPV7 have been presented.

26 **Figure S6.** Sequence comparison of PPV2 VP2 proteins. The overall VP2 similarity  
27 and polymorphic sites were shown.

28 **Figure S7.** Sequence comparison of PPV3 VP2 proteins. The overall VP2 similarity  
29 and polymorphic sites were shown.

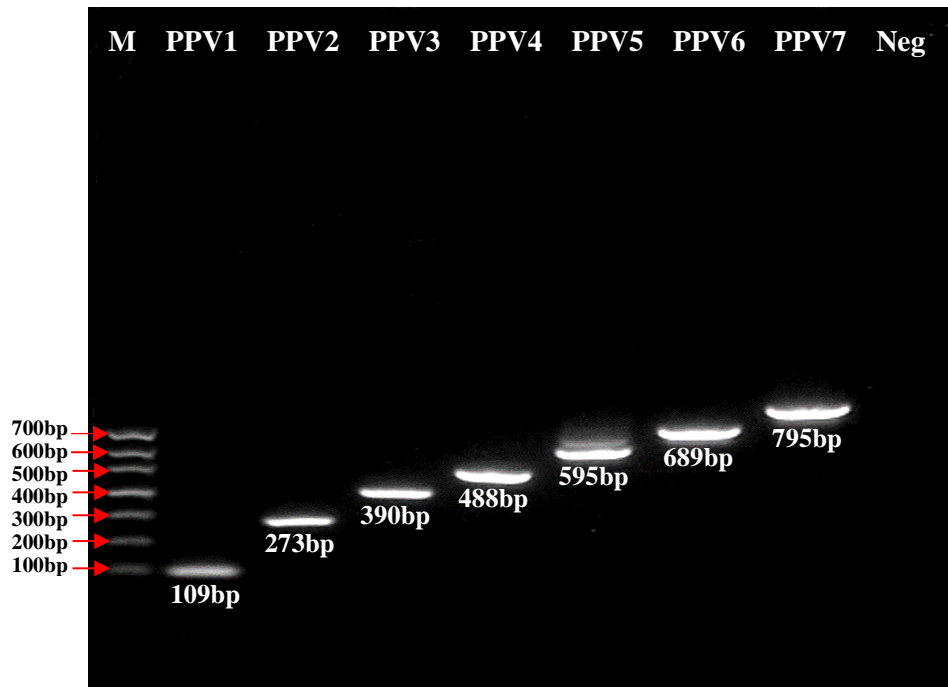
30 **Figure S8.** Sequence comparison of PPV4 VP2 proteins. The overall VP2 similarity  
31 and polymorphic sites were shown.

32 **Figure S9.** Sequence comparison of PPV5 VP2 proteins. The overall VP2 similarity  
33 and polymorphic sites were shown.

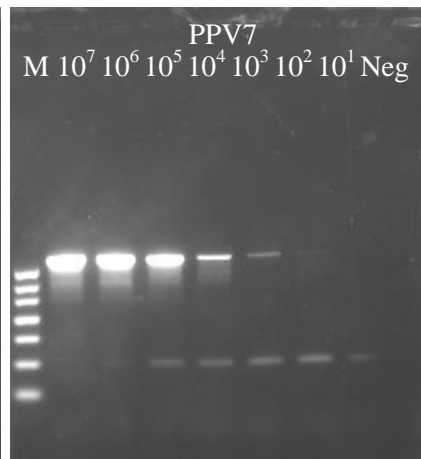
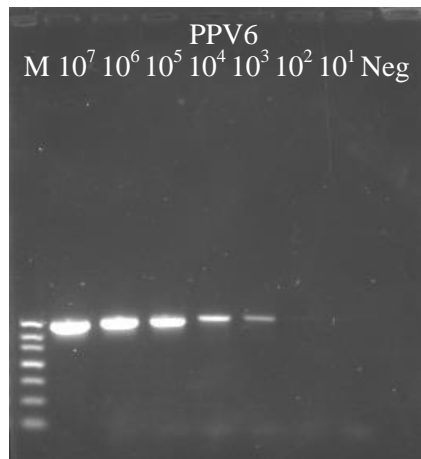
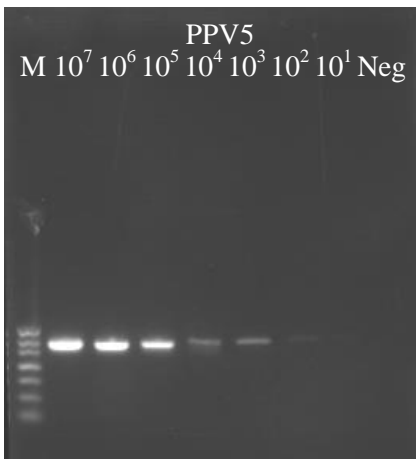
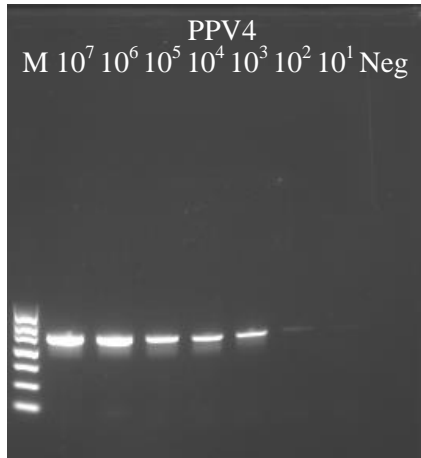
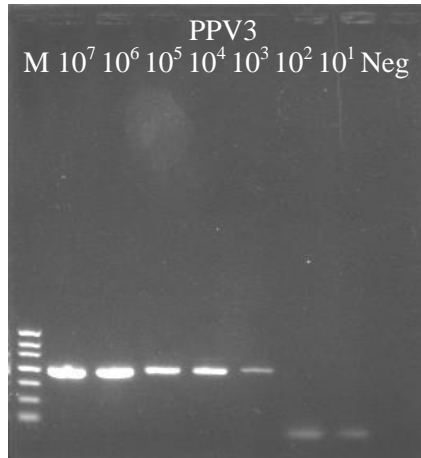
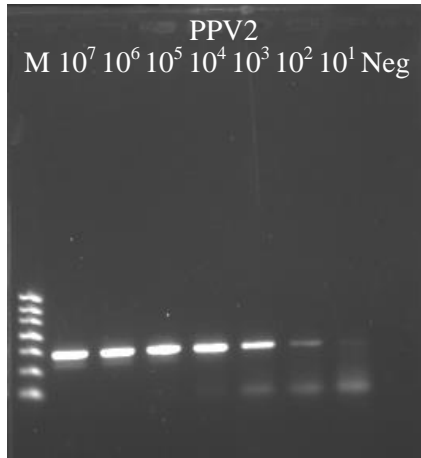
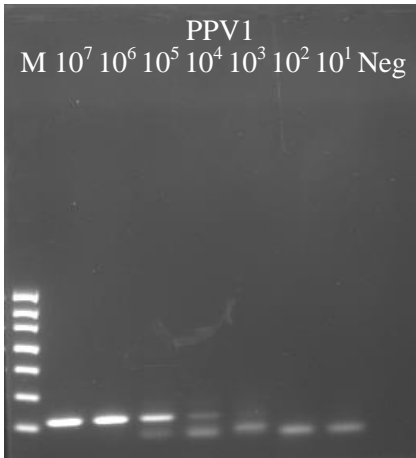
34 **Figure S10.** Sequence comparison of PPV6 VP2 proteins. The overall VP2 similarity  
35 and polymorphic sites were shown.

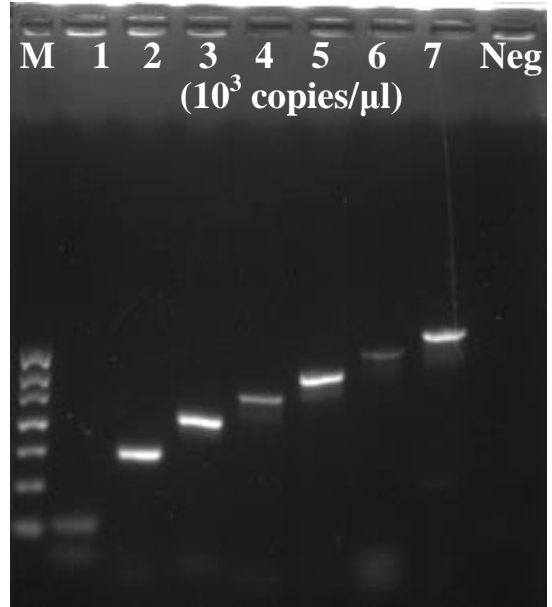
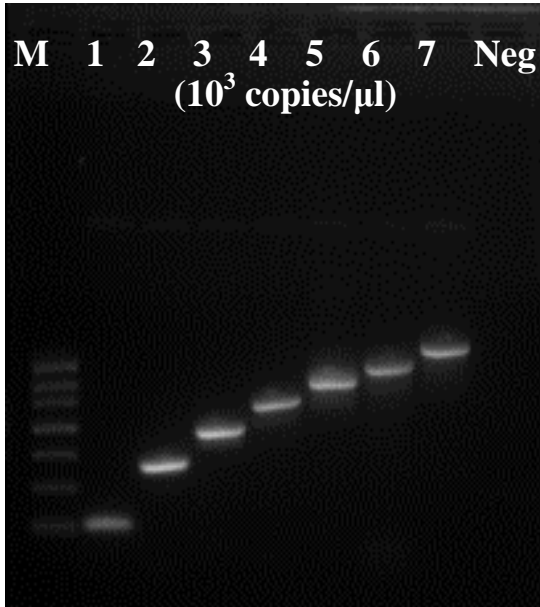
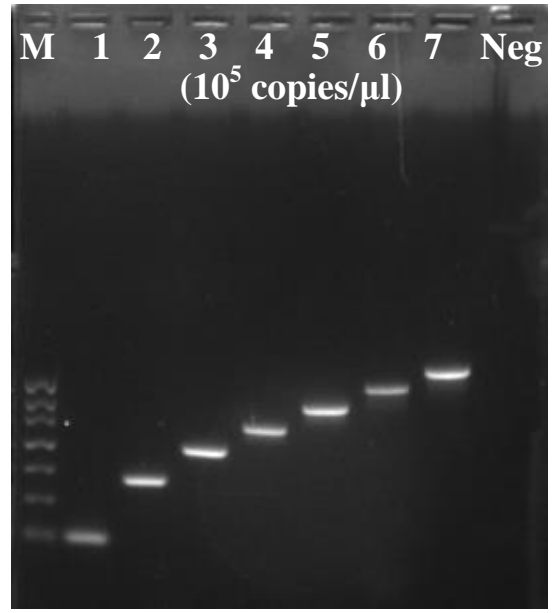
36 **Figure S11.** Sequence comparison of PPV7 VP2 proteins. The overall VP2 similarity  
37 and polymorphic sites were shown.

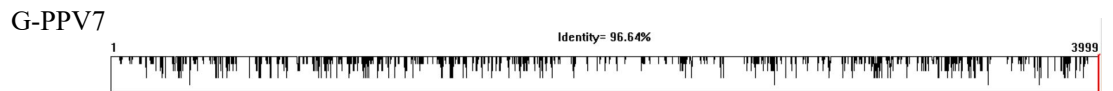
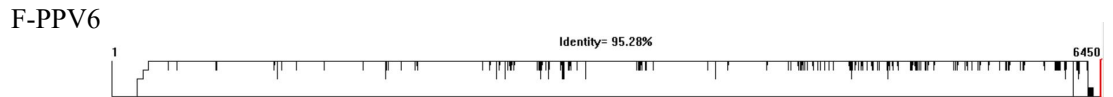
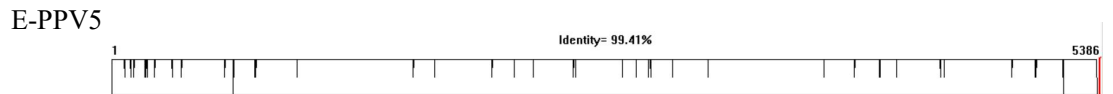
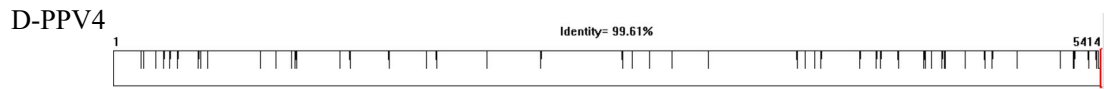
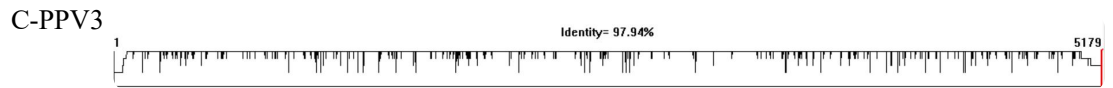
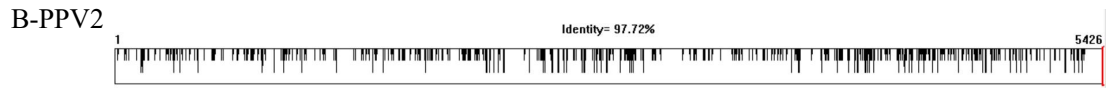
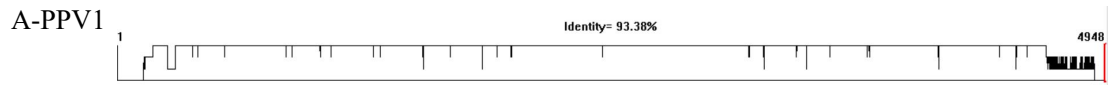
38







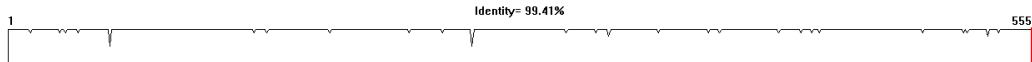




PPV2-NC025965	MVILSPKTDYKPLFLDADTSKFDSEPGMGLTPWQYDFNFCYMHFTPSDWQELGRRYDSIRPKSLTISVENVVIKDVHQTNNETNVHDSGTGGIMIFED	100
PPV2-MH921914	.....L.....	100
PPV2-KU745627	.....S.....L.....	100
PPV2-MK092395	.....	100
PPV2-MK092390	.....	100
PPV2-MK092397	.....	100
PPV2-MK092399	.....P.....	100
PPV2-MK092393	.....	100
PPV2-MK092396	.....	100
PPV2-MK092389	.....	100
PPV2-MK092391	.....	100
PPV2-MK092398	.....	100
PPV2-MK092394	.....C.....V.....	100
PPV2-MK092392	.....A.....E.....	100
PPV2-KM926355	.....	100
PPV2-JX101462	.....S.....	100
PPV2-MK092386	.....V.....K.....	100
PPV2-JX101461	.....	100
PPV2-KY018935	.....	100
PPV2-KY018936	.....	100
PPV2-MK092388	.....L.....	100
PPV2-MK092401	.....S.....	100
PPV2-MK092402	.....	100
PPV2-MK092385	.....	100
PPV2-MK092400	.....R.....	100
PPV2-MK092387	.....	100
PPV2-KP765690	.....	100
PPV2-KY586144	.....	100
PPV2-112	.....S.....L.....	100
PPV2-717	.....	100
PPV2-1137	.....S.....L.....	100
PPV2-NC025965	SEYTFPVYVIGHAQEGNPGALSIQWYNPPQYAYFTGFNPIAWDHANGTKYRVHPSADTEFFVLEEHAQAQLRSGDGTSFAYEFPSPLEPKRLGSRMGLNL	200
PPV2-MH921914	.....I.....Q.....I.....V.....	200
PPV2-KU745627	.....I.....	200
PPV2-MK092395	.....	200
PPV2-MK092390	.....P.....	200
PPV2-MK092397	.....	200
PPV2-MK092399	.....	200
PPV2-MK092393	.....	200
PPV2-MK092396	.....C.....T.....	200
PPV2-MK092389	.....	200
PPV2-MK092391	.....	200
PPV2-MK092398	.....	200
PPV2-MK092394	.....R.....	200
PPV2-MK092392	.....	200
PPV2-KM926355	.....	200
PPV2-JX101462	.....G.....N.....D.....	200
PPV2-MK092386	.....T.....C.....	200
PPV2-JX101461	.....Q.....	200
PPV2-KY018935	.....	200
PPV2-KY018936	.....	200
PPV2-MK092388	.....D.....T.....A.....T.....	200
PPV2-MK092401	.....D.....T.....A.....T.....	200
PPV2-MK092402	.....D.....T.....A.....T.....	200
PPV2-MK092385	.....D.....T.....A.....T.....	200
PPV2-MK092400	.....D.....T.....A.....T.....	200
PPV2-MK092387	.....D.....T.....A.....T.....	200
PPV2-KP765690	.....D.....S.....A.....T.....	200
PPV2-KY586144	.....D.....S.....	200
PPV2-112	.....D.....S.....I.....Q.....	200
PPV2-717	.....D.....T.....A.....T.....	200
PPV2-1137	.....D.....I.....Q.....	200
PPV2-NC025965	RHNPVLP SRLAIYLQDGS DAPTFYQPGTDLDFIPQGFIPGPRCLPVSTQLRASSDFDEMSAIAYGDPTSNRHS LMPFTRQATTISTQVNRQGEVE	300
PPV2-MH921914	.....T.....NN.....R.....S.....R.....	300
PPV2-KU745627	.....NN.....S.....R.....	300
PPV2-MK092395	.....S.....	300
PPV2-MK092390	.....	300
PPV2-MK092397	.....S.....	300
PPV2-MK092399	.....S.....P.....T.....R.....	300
PPV2-MK092393	.....I.....	300
PPV2-MK092396	.....	300
PPV2-MK092389	.....	300
PPV2-MK092391	.....	300
PPV2-MK092398	.....	300
PPV2-MK092394	.....V.....	300
PPV2-MK092392	.....F.....G.....	300
PPV2-KM926355	.....	300
PPV2-JX101462	.....	300
PPV2-MK092386	.....R.....I.....	300
PPV2-JX101461	.....	300
PPV2-KY018935	.....	300
PPV2-KY018936	.....	300
PPV2-MK092388	.....E.....S.....NG.....M.....S.....Q.....	300
PPV2-MK092401	.....E.....S.....NG.....M.....S.....Q.....	300
PPV2-MK092402	.....E.....S.....NG.....M.....S.....Q.....	300
PPV2-MK092385	.....E.....S.....NG.....M.....S.....Q.....	300
PPV2-MK092400	.....E.....S.....NG.....P.....M.....S.....Q.....	300
PPV2-MK092387	.....E.....S.....NG.....M.....S.....Q.....	300
PPV2-KP765690	.....E.....Q.....NG.....M.....S.....Q.....	300
PPV2-KY586144	.....E.....QTNG.....M.....S.....Q.....	300



PPV2-112	..... NNS..... R..... S..... R.....	300
PPV2-717	..... E. S. NG..... M. . S. . . . . Q	300
PPV2-1137	..... NN..... R..... S..... R.....	300
PPV2-NC025965	RNVHFQLGDMAFARSSAEDSFYERFEEDKDYRNPGGYVKKRPLVTAEREGLGERPGDALMVPTWGAHLPGSSSTGPGTTKTEKVSLPFIPPPMGACWDER	400
PPV2-MH921914	..... D..... K..... P.....	400
PPV2-KU745627	..... D..... K..... A.....	400
PPV2-MK092395	..... D..... K..... A.....	400
PPV2-MK092390	..... D..... K..... A.....	400
PPV2-MK092397	..... D..... K..... A.....	400
PPV2-MK092399	..... D..... K..... A.....	400
PPV2-MK092393	..... D..... K..... A.....	400
PPV2-MK092396	..... D..... K..... A.....	400
PPV2-MK092389	..... D..... K..... A.....	400
PPV2-MK092391	..... D..... K..... A.....	400
PPV2-MK092398	..... D..... K..... A.....	400
PPV2-MK092394	..... D..... K..... A.....	400
PPV2-MK092392	..... D..... K..... A.....	400
PPV2-KM926355	..... D..... K..... A.....	400
PPV2-JX101462	..... D..... K..... A.....	400
PPV2-MK092386	..... K.....	400
PPV2-JX101461	..... D..... K..... A.....	400
PPV2-KY018935	..... D..... K..... A.....	400
PPV2-KY018936	..... Q.....	400
PPV2-MK092388	..... D..... I.....	400
PPV2-MK092401	..... D..... I.....	400
PPV2-MK092402	..... D..... G..... I.....	400
PPV2-MK092385	..... D..... I.....	400
PPV2-MK092400	..... D..... I.....	400
PPV2-MK092387	..... D..... I.....	400
PPV2-KP765690	..... D..... I.....	400
PPV2-KY586144	..... D. E..... I.....	400
PPV2-112	..... D..... K..... A.....	400
PPV2-717	..... D..... K..... I.....	400
PPV2-1137	..... D..... K..... P.....	400
PPV2-NC025965	PLCYEDDIWCKKPYTDCSFMSEKNNLGAWALVDPQPQVFRMQPQVGPADLDQRTFLPALNQYAMFTVSYTMEWCEPRKHTRRHNLPEPPMPYTE	500
PPV2-MH921914	..... N.....	500
PPV2-KU745627	..... N.....	500
PPV2-MK092395	..... N.....	500
PPV2-MK092390	..... N.....	500
PPV2-MK092397	..... N.....	500
PPV2-MK092399	..... N.....	500
PPV2-MK092393	..... S..... N.....	500
PPV2-MK092396	..... N.....	500
PPV2-MK092389	..... N.....	500
PPV2-MK092391	..... N.....	500
PPV2-MK092398	..... N.....	500
PPV2-MK092394	..... N. . S.....	500
PPV2-MK092392	..... N..... L.....	500
PPV2-KM926355	..... N.....	500
PPV2-JX101462	..... N.....	500
PPV2-MK092386	..... N.....	500
PPV2-JX101461	..... N.....	500
PPV2-KY018935	..... N.....	500
PPV2-KY018936	..... N.....	500
PPV2-MK092388	..... A.....	500
PPV2-MK092401	..... A.....	500
PPV2-MK092402	..... F..... A.....	500
PPV2-MK092385	..... A.....	500
PPV2-MK092400	..... A.....	500
PPV2-MK092387	..... A.....	500
PPV2-KP765690	..... A.....	500
PPV2-KY586144	..... A.....	500
PPV2-112	..... S.....	500
PPV2-717	..... S..... A.....	500
PPV2-1137	..... S.....	500
PPV2-NC025965	SGDPPFLLTRSHASNDYPRVSLPVEAFRPEGRAHRV	536
PPV2-MH921914	..... VT.....	536
PPV2-KU745627	..... LT..... C.....	536
PPV2-MK092395	.....	536
PPV2-MK092390	.....	536
PPV2-MK092397	.....	536
PPV2-MK092399	.....	536
PPV2-MK092393	.....	536
PPV2-MK092396	.....	536
PPV2-MK092389	.....	536
PPV2-MK092391	.....	536
PPV2-MK092398	.....	536
PPV2-MK092394	.....	536
PPV2-MK092392	.....	536
PPV2-KM926355	.....	536
PPV2-JX101462	.....	536
PPV2-MK092386	.....	536
PPV2-JX101461	..... T.....	536
PPV2-KY018935	..... T.....	536
PPV2-KY018936	..... T.....	536
PPV2-MK092388	.....	536
PPV2-MK092401	..... N.....	536
PPV2-MK092402	.....	536
PPV2-MK092385	.....	536
PPV2-MK092400	.....	536
PPV2-MK092387	.....	536
PPV2-KP765690	..... T.....	536
PPV2-KY586144	.....	536
PPV2-112	..... VT.....	536
PPV2-717	.....	536
PPV2-1137	..... VT.....	536



PPV3-MK092412 MAAPVTGATGGGKVKKAQWLGGTHFSDNTIVTSHTRTSMADRRGGYVYVRSRSHVSDRQPVVMGMRTPYSYIDVNAISAHLTPRDFQQLLDEYEEIRPKK 100  
 PPV3-MK092410 ..... 100  
 PPV3-KU167028 ..... T..... 100  
 PPV3-KU167029 ..... T..... 100  
 PPV3-KY586145 ..... V..... 100  
 PPV3-MK092409 ..... 100  
 PPV3-MK092411 ..... A..... T..... 100  
 PPV3-151 ..... 100  
 PPV3-155 ..... T..... 100  
 PPV3-829 ..... T..... 100  
 PPV3-838 ..... R..... T..... 100

PPV3-MK092412 LVIGISGIVIKDVSVTTTGTTVSDSASGGITVFSDDAYDYPYVLGHNQDTLPGHLPGENYVLPQYGYLTRGREFDKGTDIVGIADHRSELYFLEHHAEC 200  
 PPV3-MK092410 ..... 200  
 PPV3-KU167028 ..... 200  
 PPV3-KU167029 ..... 200  
 PPV3-KY586145 ..... 200  
 PPV3-MK092409 ..... G..... 200  
 PPV3-MK092411 ..... S..... 200  
 PPV3-151 ..... R..... 200  
 PPV3-155 ..... 200  
 PPV3-829 ..... 200  
 PPV3-838 ..... 200

PPV3-MK092412 LGSGDTWSHAYEFPDLPFRRLTPNQSLYARHNP IPPSRLAIMTGVDSNGVPKWKRPAGEDVGKHLNYPGSPVMPTDSQIRNTDFRVLAIIGNPVT 300  
 PPV3-MK092410 ..... L..... 300  
 PPV3-KU167028 ..... A..... 300  
 PPV3-KU167029 ..... A..... 300  
 PPV3-KY586145 ..... 300  
 PPV3-MK092409 ..... S..... 300  
 PPV3-MK092411 ..... 300  
 PPV3-151 ..... 300  
 PPV3-155 ..... A..... 300  
 PPV3-829 ..... A..... 300  
 PPV3-838 ..... A..... 300

PPV3-MK092412 GDRYSVGLVHQVWSIRTEEGKSPDNFAVHSLYGGVAYTRRRHEESYTGHTHEMDGSVTNPSRVVVNEVDMAAPHVGHFTMVPGHTRVDDGSGSDTVY 400  
 PPV3-MK092410 ..... G..... 400  
 PPV3-KU167028 ..... N..... 400  
 PPV3-KU167029 ..... N..... 400  
 PPV3-KY586145 ..... N..... 400  
 PPV3-MK092409 ..... N..... K..... A..... R..... 400  
 PPV3-MK092411 ..... H..... N..... 400  
 PPV3-151 ..... N..... 400  
 PPV3-155 ..... N..... 400  
 PPV3-829 ..... N..... 400  
 PPV3-838 ..... N..... 400

PPV3-MK092412 DPKLYQEPIFPLFPAAVWNPNTLYDCQIWTKIPDTECRSFAQYPLLGWGMADPPMVFLKMRSPGPPGGAHTVPSNLNQYAFIHLHYTIEREVKR 500  
 PPV3-MK092410 ..... F..... W... 500  
 PPV3-KU167028 ..... F..... W... 500  
 PPV3-KU167029 ..... F..... W... 500  
 PPV3-KY586145 ..... F..... W... 500  
 PPV3-MK092409 ..... R..... F..... W... 500  
 PPV3-MK092411 ..... R..... I..... F..... W... 500  
 PPV3-151 ..... F..... W... 500  
 PPV3-155 ..... F..... W... 500  
 PPV3-829 ..... F..... W... 500  
 PPV3-838 ..... F..... W... 500

PPV3-MK092412 RRRSRRHNEKPAFPPTDGRMPFMLANDDRDPNVPVYVPSDQWVAQNFSRKL 555  
 PPV3-MK092410 ..... 555  
 PPV3-KU167028 ..... 555  
 PPV3-KU167029 ..... P..... 555  
 PPV3-KY586145 ..... 555  
 PPV3-MK092409 ..... 555  
 PPV3-MK092411 ..... A..... S..... 555  
 PPV3-151 ..... 555  
 PPV3-155 ..... E..... 555  
 PPV3-829 ..... 555  
 PPV3-838 ..... E..... 555

PPV4-NC014665	MSGDAIPSIIFNTPWYYDLNIMSCHFSFSAFQTLIEDYDAFRPRSLTVHLKELVIKDVCQQQLQAEQVSDNNSATLLAFEDVNYELPYVLGGGQVSV	100
PPV4-MH921902	.....	100
PPV4-MH921915	.....	100
PPV4-KY586146	.....	100
PPV4-MH921910	.....	100
PPV4-GU978965	.....	100
PPV4-GU978967	.....	100
PPV4-GU978968	.....	100
PPV4-GU978964	.....	100
PPV4-MK092421	.....	100
PPV4-GU978966	.....	100
PPV4-HM031135	.....	100
PPV4-HM031134	.....	100
PPV4-MH921911	.....	100
PPV4-MK092420	.....	100
PPV4-68	.....	100
PPV4-982	.....	100

PPV4-NC014665	GHLPGQPYQLPKYSYRTVGVKPDNSGFVPGRNTHPDQGGPHPKASKTIWYSQYLETQDTEFYILENHKATILHSGNTFSQNYNFPDLPFEQLTQYMW	200
PPV4-MH921902	.....	200
PPV4-MH921915	.....	200
PPV4-KY586146	.....	200
PPV4-MH921910	..... S.....	200
PPV4-GU978965	.....	200
PPV4-GU978967	.....	200
PPV4-GU978968	.....	200
PPV4-GU978964	.....	200
PPV4-MK092421	.....	200
PPV4-GU978966	.....	200
PPV4-HM031135	.....	200
PPV4-HM031134	.....	200
PPV4-MH921911	.....	200
PPV4-MK092420	..... A..... T.....	200
PPV4-68	.....	200
PPV4-982	.....	200

PPV4-NC014665	RQDNPLIDQRIQVMSRMYDDGPQKTFATIEVNPYIVPFTVKSTSRPAMFLAGGRFKDGDYSITGPDREKTSFRYYNDPPWIIITRDYLFSSDLAKTEREQ	300
PPV4-MH921902	..... K.....	300
PPV4-MH921915	..... K.....	300
PPV4-KY586146	..... K.....	300
PPV4-MH921910	..... K..... Q..... K. C.....	300
PPV4-GU978965	..... K..... Q..... K.....	300
PPV4-GU978967	..... K..... Q..... K.....	300
PPV4-GU978968	..... K..... Q..... K.....	300
PPV4-GU978964	..... K..... Q..... K.....	300
PPV4-MK092421	..... K..... Q..... K.....	300
PPV4-GU978966	..... K..... Q..... K.....	300
PPV4-HM031135	..... K..... Q..... K.....	300
PPV4-HM031134	..... K..... Q..... K.....	300
PPV4-MH921911	..... K..... Q..... K.....	300
PPV4-MK092420	..... K..... KQ. A.....	300
PPV4-68	..... K.....	300
PPV4-982	..... K..... Q..... YK.....	300

PPV4-NC014665	PGPRQGDIVVRTPDGLIIVTTNALAYGYTTEYLKNIPLLSKHYGVENFRLAVENERGYSMPGHPSHIRETLFRGKLPSTGIRESTIKSEDQRKEITFPDY	400
PPV4-MH921902	..... E.....	400
PPV4-MH921915	..... D..... E.....	400
PPV4-KY586146	..... E.....	400
PPV4-MH921910	..... A..... E.....	400
PPV4-GU978965	..... E.....	400
PPV4-GU978967	..... E.....	400
PPV4-GU978968	..... E.....	400
PPV4-GU978964	..... E.....	400
PPV4-MK092421	..... E.....	400
PPV4-GU978966	..... E.....	400
PPV4-HM031135	..... E.....	400
PPV4-HM031134	..... E.....	400
PPV4-MH921911	..... E.....	400
PPV4-MK092420	..... EV.....	400
PPV4-68	..... E.....	400
PPV4-982	..... E.....	400

PPV4-NC014665	MGSVNEKTTANLESQIWSQIPNTDITEKCTTPPLSIWGMKNPPMVFLRLLAQMGPPRRSACSGSIPSNTYLNQYCFLLTYEMEDVTKRTRKTVRWNP	500
PPV4-MH921902	.....	500
PPV4-MH921915	.....	500
PPV4-KY586146	.....	500
PPV4-MH921910	.....	500
PPV4-GU978965	.....	500
PPV4-GU978967	.....	500
PPV4-GU978968	.....	500
PPV4-GU978964	.....	500
PPV4-MK092421	.....	500
PPV4-GU978966	.....	500
PPV4-HM031135	.....	500
PPV4-HM031134	.....	500
PPV4-MH921911	..... T.....	500
PPV4-MK092420	.....	500
PPV4-68	.....	500
PPV4-982	.....	500

PPV4-NC014665	I PPPQIPMGPNL PVYILNKEGQYRMPTEVWTAKQPRHRR	541
PPV4-MH921902	.....	541
PPV4-MH921915	.....	541
PPV4-KY586146	..... T.....	541
PPV4-MH921910	.....	541
PPV4-GU978965	.....	541
PPV4-GU978967	.....	541
PPV4-GU978968	.....	541
PPV4-GU978964	.....	541
PPV4-MK092421	.....	541
PPV4-GU978966	..... P.....	541
PPV4-HM031135	..... P.....	541
PPV4-HM031134	..... P.....	541
PPV4-MH921911	.....	541
PPV4-MK092420	.....	541
PPV4-68	.....	541
PPV4-982	.....	541

PPV5-NC023020	MNEEPAKRRMTEDRCDSTTRCETLDTQYEDSKMAGGGGGGNQPKSSWIGGAFFDTTITTYGTRRCVLSFFPHNYCTTESGDHIPS LVVCTP WYYVDL	100
PPV5-MK092448		H... 100
PPV5-MH921905		100
PPV5-MK092441		100
PPV5-MK092434		100
PPV5-MH921912		100
PPV5-MH921908		100
PPV5-MK092452		100
PPV5-JX896319		100
PPV5-JX896318		100
PPV5-MH921904		100
PPV5-MK092451	N	L... 100
PPV5-KX273436		G... 100
PPV5-KX352458		G... 100
PPV5-KX352457		G... 100
PPV5-KX352456		G... 100
PPV5-KX352455		G... 100
PPV5-JX896322		100
PPV5-KU745628	K	100
PPV5-MK092453	Y	100
PPV5-MK092449		V... 100
PPV5-MK092438		S... 100
PPV5-MK092435		Y... 100
PPV5-MK092426		A... 100
PPV5-MK092425		100
PPV5-MK092430		100
PPV5-MK092450		R... 100
PPV5-MK092445		P... 100
PPV5-MK092447		A... A... 100
PPV5-MK092446		A... 100
PPV5-JX896321		100
PPV5-JX896320		100
PPV5-MK092439		100
PPV5-MK092431		100
PPV5-MK092436		100
PPV5-MK092427		100
PPV5-MK092443		100
PPV5-MK092444		V... 100
PPV5-MK092429		100
PPV5-MK092428		100
PPV5-MK092433		100
PPV5-MK092440		100
PPV5-MK092442		100
PPV5-MK092432		100
PPV5-MK092437	RES.	100
PPV5-67		100
PPV5-911		100
PPV5-NC023020	NILSAHFSPSAWQTLLEEYDAFKPLKLEVKIKEIVVKDVNNVTGKQCCTVSDNAMAAVLCFEDTHYELPYVLGGGQLTVPGHLPGQTYELPKYCYRTVG	200
PPV5-MK092448	Y	M... 200
PPV5-MH921905		M... 200
PPV5-MK092441		M... 200
PPV5-MK092434		M... 200
PPV5-MH921912		M... 200
PPV5-MH921908		M... 200
PPV5-MK092452		M... 200
PPV5-JX896319		M... 200
PPV5-JX896318		M... 200
PPV5-MH921904		M... 200
PPV5-MK092451	MA	Y... 200
PPV5-KX273436		M... V... 200
PPV5-KX352458		M... V... 200
PPV5-KX352457		M... V... 200
PPV5-KX352456		M... V... 200
PPV5-KX352455		M... V... 200
PPV5-JX896322		M... 200
PPV5-KU745628		M... 200
PPV5-MK092453		M... 200
PPV5-MK092449		M... 200
PPV5-MK092438		M... 200
PPV5-MK092435		M... 200
PPV5-MK092426		M... 200
PPV5-MK092425		M... 200
PPV5-MK092430		M... 200
PPV5-MK092450		M... 200
PPV5-MK092445		M... 200
PPV5-MK092447		M... 200
PPV5-MK092446		M... 200
PPV5-JX896321		200
PPV5-JX896320		200
PPV5-MK092439		T... G... 200

PPV5-MK092431	..... M.	200
PPV5-MK092436	..... M.	200
PPV5-MK092427	..... M.	200
PPV5-MK092443	..... M.	200
PPV5-MK092444	..... P.	200
PPV5-MK092429	..... P.	200
PPV5-MK092428	..... M.	200
PPV5-MK092433	..... M.	200
PPV5-MK092440	..... M.	200
PPV5-MK092442	..... M.	200
PPV5-MK092432	..... M.	200
PPV5-MK092437	..... M.	200
PPV5-67	..... M.	200
PPV5-911	..... M.	200
PPV5-NC023020	KPHSEMWSPIDGSKRAHLDMPFVQPTQTEFFILENRHSTILHTGNEFFQTYDFPDLHFEQLTQYMWDDARRLDNPMKGGQRIQVMKNKPTENKDMQMFIRA	300
PPV5-MK092448	... N.	300
PPV5-MH921905		300
PPV5-MK092441		300
PPV5-MK092434		300
PPV5-MH921912	... V.	300
PPV5-MH921908	... V.	300
PPV5-MK092452	... V.	300
PPV5-JX896319	... V.	300
PPV5-JX896318	... V.	300
PPV5-MH921904	... V. ... N.	300
PPV5-MK092451	... V. ... I.	300
PPV5-KX273436	... V. ... V. ... K.	300
PPV5-KX352458	... V. ... V. ... V. ... K.	300
PPV5-KX352457	... V. ... V. ... K.	300
PPV5-KX352456	... V. ... V. ... K.	300
PPV5-KX352455	... V. ... V. ... V. ... K.	300
PPV5-JX896322	... V. ... V.	300
PPV5-KU745628	... V.	300
PPV5-MK092453	... V.	300
PPV5-MK092449	... V.	300
PPV5-MK092438		300
PPV5-MK092435	... P.	300
PPV5-MK092426		300
PPV5-MK092425	... G.	300
PPV5-MK092430	... P.	300
PPV5-MK092450		300
PPV5-MK092445		300
PPV5-MK092447		300
PPV5-MK092446		300
PPV5-JX896321		300
PPV5-JX896320		300
PPV5-MK092439	... A.	300
PPV5-MK092431		300
PPV5-MK092436	... R.	300
PPV5-MK092427		300
PPV5-MK092443		300
PPV5-MK092444	... L. ... G.	300
PPV5-MK092429		300
PPV5-MK092428	... T.	300
PPV5-MK092433		300
PPV5-MK092440		300
PPV5-MK092442		300
PPV5-MK092432		300
PPV5-MK092437	... I.	300
PPV5-67	... V.	300
PPV5-911		300
PPV5-NC023020	SSYLVPWIVNSLNRPMFLQGGRLKGDYSIVGPGTREQATYHYFNDFPVVVERDIYKFTTSMKRETQQPGPRTQETTVPDGTIIITNSLAYGQVP	400
PPV5-MK092448		400
PPV5-MH921905		400
PPV5-MK092441		400
PPV5-MK092434		400
PPV5-MH921912		400
PPV5-MH921908		400
PPV5-MK092452		400
PPV5-JX896319		400
PPV5-JX896318		400
PPV5-MH921904		400
PPV5-MK092451		400
PPV5-KX273436	... C. ... A.	400
PPV5-KX352458	... C. ... A. ... A.	400
PPV5-KX352457	... C. ... A.	400
PPV5-KX352456	... C. ... A.	400
PPV5-KX352455	... C. ... A.	400
PPV5-JX896322		400
PPV5-KU745628		400
PPV5-MK092453	... I.	400
PPV5-MK092449		400
PPV5-MK092438		400
PPV5-MK092435	... A.	400
PPV5-MK092426		400

PPV5-MK092425	.....	400
PPV5-MK092430	.....	400
PPV5-MK092450	.....	400
PPV5-MK092445	.....	400
PPV5-MK092447	.....	400
PPV5-MK092446	..... R.....	400
PPV5-JX896321	.....	400
PPV5-JX896320	.....	400
PPV5-MK092439	.....	400
PPV5-MK092431	.....	400
PPV5-MK092436	.....	400
PPV5-MK092427	.....	400
PPV5-MK092443	..... T..... A.....	400
PPV5-MK092444	..... H.....	400
PPV5-MK092429	.....	400
PPV5-MK092428	.....	400
PPV5-MK092433	.....	400
PPV5-MK092440	.....	400
PPV5-MK092442	.....	400
PPV5-MK092432	.....	400
PPV5-MK092437	..... G..... R.....	400
PPV5-67	.....	400
PPV5-911	.....	400
PPV5-NC023020	ENIDNIPSDHKAAFVGTGYRLVAEQRGYSTPGMPSHIRELLTKTPKLEKDQEI TFPNFEQSVSEKTSANLESQIWAYIPNTDNKHNCGTPPLSIWG	500
PPV5-MK092448	.....	500
PPV5-MH921905	.....	500
PPV5-MK092441	.....	500
PPV5-MK092434	.....	500
PPV5-MH921912	.....	500
PPV5-MH921908	.....	500
PPV5-MK092452	.....	500
PPV5-JX896319	.....	500
PPV5-JX896318	.....	500
PPV5-MH921904	.....	500
PPV5-MK092451	..... G.....	500
PPV5-KX273436	.....	500
PPV5-KX352458	.....	500
PPV5-KX352457	.....	500
PPV5-KX352456	.....	500
PPV5-KX352455	.....	500
PPV5-JX896322	.....	500
PPV5-KU745628	.....	500
PPV5-MK092453	.....	500
PPV5-MK092449	..... T.....	500
PPV5-MK092438	.....	500
PPV5-MK092435	.....	500
PPV5-MK092426	.....	500
PPV5-MK092425	..... G.....	500
PPV5-MK092430	.....	500
PPV5-MK092450	.....	500
PPV5-MK092445	.....	500
PPV5-MK092447	.....	500
PPV5-MK092446	.....	500
PPV5-JX896321	.....	500
PPV5-JX896320	.....	500
PPV5-MK092439	..... V..... D.....	500
PPV5-MK092431	..... D..... T.....	500
PPV5-MK092436	..... M.....	500
PPV5-MK092427	.....	500
PPV5-MK092443	.....	500
PPV5-MK092444	.....	500
PPV5-MK092429	.....	500
PPV5-MK092428	..... D.....	500
PPV5-MK092433	.....	500
PPV5-MK092440	.....	500
PPV5-MK092442	.....	500
PPV5-MK092432	.....	500
PPV5-MK092437	.....	500
PPV5-67	.....	500
PPV5-911	.....	500
PPV5-NC023020	MENPPMVFLRLLPQLGPEKSSCSGSKPSKKFLNQYCFLLLEYTVTAWVRRKHTPRWNPMPGVTIPTYNNDPVYILDQNGFYKLPETVWTAKQRVRA	600
PPV5-MK092448	.....	600
PPV5-MH921905	.....	600
PPV5-MK092441	.....	600
PPV5-MK092434	.....	600
PPV5-MH921912	.....	600
PPV5-MH921908	.....	600
PPV5-MK092452	.....	600
PPV5-JX896319	.....	600
PPV5-JX896318	.....	600
PPV5-MH921904	.....	600
PPV5-MK092451	.....	600
PPV5-KX273436	.....	600
PPV5-KX352458	.....	600
PPV5-KX352457	.....	600

PPV5-KX352456 .....	600
PPV5-KX352455 .....	600
PPV5-JX896322 .....	600
PPV5-KU745628 .....	600
PPV5-MK092453 .....	600
PPV5-MK092449 .....	600
PPV5-MK092438 .....	600
PPV5-MK092435 .....	600
PPV5-MK092426 .....	600
PPV5-MK092425 .....	600
PPV5-MK092430 .....	600
PPV5-MK092450 .....	600
PPV5-MK092445 .....	600
PPV5-MK092447 .....	600
PPV5-MK092446 .....	600
PPV5-JX896321 .....	600
PPV5-JX896320 .....	600
PPV5-MK092439 .....	600
PPV5-MK092431 .....	600
PPV5-MK092436 .....	600
PPV5-MK092427 .....	600
PPV5-MK092443 .....	600
PPV5-MK092444 .....	600
PPV5-MK092429 .....	600
PPV5-MK092428 .....	600
PPV5-MK092433 .....	600
PPV5-MK092440 .....	600
PPV5-MK092442 .....	600
PPV5-MK092432 .....	600
PPV5-MK092437 .....	600
PPV5-67 .....	600
PPV5-911 .....	600

PPV5-NC023020 RR	602
PPV5-MK092448 ..	602
PPV5-MH921905 ..	602
PPV5-MK092441 ..	602
PPV5-MK092434 ..	602
PPV5-MH921912 ..	602
PPV5-MH921908 ..	602
PPV5-MK092452 ..	602
PPV5-JX896319 ..	602
PPV5-JX896318 ..	602
PPV5-MH921904 ..	602
PPV5-MK092451 ..	602
PPV5-KX273436 ..	602
PPV5-KX352458 ..	602
PPV5-KX352457 ..	602
PPV5-KX352456 ..	602
PPV5-KX352455 ..	602
PPV5-JX896322 ..	602
PPV5-KU745628 ..	602
PPV5-MK092453 ..	602
PPV5-MK092449 ..	602
PPV5-MK092438 ..	602
PPV5-MK092435 ..	602
PPV5-MK092426 ..	602
PPV5-MK092425 ..	602
PPV5-MK092430 ..	602
PPV5-MK092450 ..	602
PPV5-MK092445 ..	602
PPV5-MK092447 ..	602
PPV5-MK092446 ..	602
PPV5-JX896321 ..	602
PPV5-JX896320 ..	602
PPV5-MK092439 ..	602
PPV5-MK092431 ..	602
PPV5-MK092436 ..	602
PPV5-MK092427 ..	602
PPV5-MK092443 ..	602
PPV5-MK092444 ..	602
PPV5-MK092429 ..	602
PPV5-MK092428 ..	602
PPV5-MK092433 ..	602
PPV5-MK092440 ..	602
PPV5-MK092442 ..	602
PPV5-MK092432 ..	602
PPV5-MK092437 ..	602
PPV5-67 ..	602
PPV5-911 ..	602



PPV6-NC023860	MDISSCCPGGISASGAASNNSGLACGGGGTNLGTESLVSQCQFGKNSVITSSFRRLISPWPKYCCSSAHLIPGVVYETPWCCYDLNVISAHFSPSA	100
PPV6-MH447535	.....	100
PPV6-MH921907	.....	100
PPV6-MH921900	.....	100
PPV6-MH921901	.....	100
PPV6-MH921903	.....	100
PPV6-KX273435	.....	100
PPV6-KR709262	.....	100
PPV6-KR709263	.....	100
PPV6-MH447539	.....	100
PPV6-MH447540	.....	100
PPV6-MH447537	.....	100
PPV6-KR709267	.....	100
PPV6-MH921909	..... V .....	100
PPV6-MH921906	..... V .....	100
PPV6-MH447536	..... V .....	100
PPV6-MH447538	..... V .....	100
PPV6-MH447541	.....	100
PPV6-MH921913	.....	100
PPV6-MH558679	.....	100
PPV6-KR709265	.....	100
PPV6-KR709266	.....	100
PPV6-KR709268	.....	100
PPV6-KF999685	.....	100
PPV6-MK092462	.....	100
PPV6-KR709264	.....	100
PPV6-MG760726	.....	100
PPV6-KY094494	.....	100
PPV6-MK092467	.....	100
PPV6-MK092466	.....	100
PPV6-MK092465	.....	100
PPV6-MK092464	.....	100
PPV6-MK092463	.....	100
PPV6-MK825573	.....	100
PPV6-KF999681	.....	100
PPV6-KF999684	.....	100
PPV6-KF999683	.....	100
PPV6-KF999682	.....	100
PPV6-68	.....	100
PPV6-431	.....	100
PPV6-NC023860	WQRLLLEDYDAFRPKSLKVTIQSLVFKDVCQGAEKQTTVQDSQSATIAIFEDKDYDYPVMGGGQKTPVGHLPGQPYNLPKYSYRTLGSVKESNRASMGGS	200
PPV6-MH447535	.....	200
PPV6-MH921907	.....	200
PPV6-MH921900	.....	200
PPV6-MH921901	.....	200
PPV6-MH921903	.....	200
PPV6-KX273435	.....	200
PPV6-KR709262	.....	200
PPV6-KR709263	.....	200
PPV6-MH447539	.....	200
PPV6-MH447540	.....	200
PPV6-MH447537	.....	200
PPV6-KR709267	.....	200
PPV6-MH921909	.....	200
PPV6-MH921906	.....	200
PPV6-MH447536	.....	200
PPV6-MH447538	.....	200
PPV6-MH447541	.....	200
PPV6-MH921913	.....	200
PPV6-MH558679	.....	200
PPV6-KR709265	.....	200
PPV6-KR709266	.....	200
PPV6-KR709268	.....	200
PPV6-KF999685	.....	200
PPV6-MK092462	.....	200
PPV6-KR709264	.....	200
PPV6-MG760726	.....	200
PPV6-KY094494	..... T .....	200
PPV6-MK092467	..... GM. HR. ...	200
PPV6-MK092466	..... GM. HR. ...	200
PPV6-MK092465	..... GM. HR. ...	200
PPV6-MK092464	..... GM. HR. ...	200
PPV6-MK092463	..... GM. HR. ...	200
PPV6-MK825573	..... SM. HH. ...	200
PPV6-KF999681	..... SM. HH. ...	200
PPV6-KF999684	..... SM. HH. ...	200
PPV6-KF999683	..... SM. HH. ...	200
PPV6-KF999682	..... SM. HH. ...	200
PPV6-68	.....	200

PPV6-431	.....	200
PPV6-NC023860	GYTFKSNQDTELFLLETHDATHIRGGGTFEQYYEFPNDLPFENLTQYPWDIRRDQNPYQQRITVMSGSDRDQVGLDGDYFSPFRFKGHRPAMWLPQG	300
PPV6-MH447535	.....	300
PPV6-MH921907	.....	300
PPV6-MH921900	.....	300
PPV6-MH921901	.....	300
PPV6-MH921903	.....	300
PPV6-KX273435	.....	300
PPV6-KR709262	.....	300
PPV6-KR709263	.....	300
PPV6-MH447539	.....	300
PPV6-MH447540	.....	300
PPV6-MH447537	.....	300
PPV6-KR709267	.....	300
PPV6-MH921909	..... T.....	300
PPV6-MH921906	..... T.....	300
PPV6-MH447536	..... T.....	300
PPV6-MH447538	..... T.....	300
PPV6-MH447541	..... T.....	300
PPV6-MH921913	..... T.....	300
PPV6-MH558679	..... T.....	300
PPV6-KR709265	..... T.....	300
PPV6-KR709266	..... T.....	300
PPV6-KR709268	..... T.....	300
PPV6-KF999685	.....	300
PPV6-MK092462	.....	300
PPV6-KR709264	..... A.....	300
PPV6-MG760726	..... A.....	300
PPV6-KY094494	..... A.....	300
PPV6-MK092467	..... S..... S..... A...G.....	300
PPV6-MK092466	..... S..... A...G.....	300
PPV6-MK092465	..... S..... A...G..... K.....	300
PPV6-MK092464	..... S..... A...G.....	300
PPV6-MK092463	..... S..... S..... A...G.....	300
PPV6-MK825573	..... S..... A...G.....	300
PPV6-KF999681	..... S..... A...G.....	300
PPV6-KF999684	..... S..... A...G.....	300
PPV6-KF999683	..... S..... A...G.....	300
PPV6-KF999682	..... S..... A...G.....	300
PPV6-68	.....	300
PPV6-431	.....	300
PPV6-NC023860	RLIQGKFIDTHPIPNTRSGVHPNDFHTRDGHGDTHRTHEERIYSLDTGLAAMPRAAHRPTLQPGPRTLSHAVRRPDGSTVVATANACAYAYTQENPHQE	400
PPV6-MH447535	.....	400
PPV6-MH921907	.....	400
PPV6-MH921900	.....	400
PPV6-MH921901	.....	400
PPV6-MH921903	.....	400
PPV6-KX273435	.....	400
PPV6-KR709262	.....	400
PPV6-KR709263	.....	400
PPV6-MH447539	.....	400
PPV6-MH447540	.....	400
PPV6-MH447537	.....	400
PPV6-KR709267	..... E.....	400
PPV6-MH921909	.....	400
PPV6-MH921906	.....	400
PPV6-MH447536	.....	400
PPV6-MH447538	.....	400
PPV6-MH447541	.....	400
PPV6-MH921913	.....	400
PPV6-MH558679	.....	400
PPV6-KR709265	.....	400
PPV6-KR709266	.....	400
PPV6-KR709268	.....	400
PPV6-KF999685	.....	400
PPV6-MK092462	..... R.....	400
PPV6-KR709264	.....	400
PPV6-MG760726	.....	400
PPV6-KY094494	.....	400
PPV6-MK092467	..... S..... K...T.....	400
PPV6-MK092466	..... S..... K...T.....	400
PPV6-MK092465	..... S..... K...T.....	400
PPV6-MK092464	..... S..... K...T.....	400
PPV6-MK092463	..... S..... K...T.....	400
PPV6-MK825573	..... S..... K...T.....	400
PPV6-KF999681	..... S..... K...T.....	400
PPV6-KF999684	..... S..... K...T.....	400
PPV6-KF999683	..... S..... K...T.....	400
PPV6-KF999682	..... S..... K...T.....	400
PPV6-68	.....	400
PPV6-431	.....	400
PPV6-NC023860	PWSDLNVRHTMYRLAYQRQKGFQPGDPLHIRTHACYGDGDTVIPKEESLWPTVLGSCTEKSPACLESQIWCKTPNVDVYGEHTPLPLALWGMHAPPVHV	500
PPV6-MH447535	.....	500
PPV6-MH921907	.....	500

PPV6-MH921900	.....	500
PPV6-MH921901	.....	500
PPV6-MH921903	.....	500
PPV6-KX273435	.....	500
PPV6-KR709262	.....	500
PPV6-KR709263	.....	500
PPV6-MH447539	.....	500
PPV6-MH447540	.....	500
PPV6-MH447537	.....	500
PPV6-KR709267	.....	500
PPV6-MH921909	.....	500
PPV6-MH921906	.....	500
PPV6-MH447536	.....	500
PPV6-MH447538	.....	500
PPV6-MH447541	.....	500
PPV6-MH921913	.....	500
PPV6-MH558679	.....	500
PPV6-KR709265	.....	500
PPV6-KR709266	.....	500
PPV6-KR709268	.....	500
PPV6-KF999685	.....	500
PPV6-MK092462	..... G. . . . . A . . . . .	500
PPV6-KR709264	.....	500
PPV6-MG760726	.....	500
PPV6-KY094494	.....	500
PPV6-MK092467	..... H. . . . . S . . . D . . . . . R . . . . .	500
PPV6-MK092466	..... H. . . . . S . . . D . . . . . R . . . . .	500
PPV6-MK092465	..... H. . . . . S . . . D . . . . . R . . . . .	500
PPV6-MK092464	..... H. . . . . S . . . D . . . . . R . . . . .	500
PPV6-MK092463	..... H. . . . . S . . . D . . . . . R . . . . .	500
PPV6-MK825573	..... H. . . . . N . . . D . . . . . R . . . . .	500
PPV6-KF999681	..... H. . . . . N . . . D . . . . . R . . . . .	500
PPV6-KF999684	..... H. . . . . N . . . D . . . . . R . . . . .	500
PPV6-KF999683	..... H. . . . . N . . . D . . . . . R . . . . .	500
PPV6-KF999682	..... H. . . . . S . . . D . . . . . R . . . . .	500
PPV6-68	.....	500
PPV6-431	.....	500

PPV6-NC023860	FLRMLAQEGPPNVSTCRPAQSGQTFINQYGFLLCFTMWVEVKPRPKSIKQWNPPIPISIPVGGSGPAFILDQDGYRLEPHWSARERIRSKR	594
PPV6-MH447535	.....	594
PPV6-MH921907	.....	594
PPV6-MH921900	.....	594
PPV6-MH921901	.....	594
PPV6-MH921903	.....	594
PPV6-KX273435	.....	594
PPV6-KR709262	.....	594
PPV6-KR709263	.....	594
PPV6-MH447539	.....	594
PPV6-MH447540	.....	594
PPV6-MH447537	.....	594
PPV6-KR709267	.....	594
PPV6-MH921909	.....	594
PPV6-MH921906	.....	594
PPV6-MH447536	.....	594
PPV6-MH447538	.....	594
PPV6-MH447541	.....	594
PPV6-MH921913	.....	594
PPV6-MH558679	.....	594
PPV6-KR709265	.....	594
PPV6-KR709266	.....	594
PPV6-KR709268	.....	594
PPV6-KF999685	.....	594
PPV6-MK092462	..... T . . . . .	594
PPV6-KR709264	.....	594
PPV6-MG760726	.....	594
PPV6-KY094494	.....	594
PPV6-MK092467	.....	594
PPV6-MK092466	..... R . . . . .	594
PPV6-MK092465	.....	594
PPV6-MK092464	..... P . . . . .	594
PPV6-MK092463	.....	594
PPV6-MK825573	.....	594
PPV6-KF999681	.....	594
PPV6-KF999684	.....	594
PPV6-KF999683	.....	594
PPV6-KF999682	.....	594
PPV6-68	.....	594
PPV6-431	.....	594

PPV7-NC040562	MAEHITLSNTFMAYWENDPYQPSYVPFQKNNVLSYNTGWHILPNLWRHFLSPKQWYELCINYEAYHVEGTSTTVFNPPIPITNNLAIQGTSTFTAFNNT	100
PPV7-MH422967	.....T.....E.....T.....I.....	100
PPV7-MK092493	.....T.K.....E.....T.....I.....	100
PPV7-MK092482	.....T.K.....E.....T.....I.....	100
PPV7-MK092492	.....A.....T.K.....E.....T.....I.....K.....	100
PPV7-MK092488	.....T.K.....E.....T.....I.....NT.....	100
PPV7-MT747168	.....T.K.....E.....T.....I.....	100
PPV7-MK092489	.....T.K.....E.....T.....I.....	100
PPV7-MK092484	.....T.K.....E.....T.....I.....L.....	100
PPV7-MK092487	.....T.K.....E.....T.....I.....	100
PPV7-MH422966	.....T.P.....R.....I.....	100
PPV7-MH422964	.....A.N.P.....T.....I.....	100
PPV7-MH422965	.....A.N.P.....T.....I.....	100
PPV7-MH422963	.....T.K.....E.....T.....I.....	100
PPV7-MK092496	.....T.K.....E.....T.....I.....	100
PPV7-MG543470	.....T.K.....K.T.....I.....	100
PPV7-MK484102	.....A.T.....V.....	100
PPV7-MK484100	.....T.....E.....S.....N.....	100
PPV7-MK092486	.....A.T.....	100
PPV7-MK092483	.....S.....A.T.....I.....	100
PPV7-MK092491	.....T.....V.....	100
PPV7-MG543466	.....A.T.....I.....	100
PPV7-MG543457	.....T.....V.....N.....	100
PPV7-MG543456	.....T.....V.....N.....	100
PPV7-MG543458	.....T.....V.....N.....	100
PPV7-MG543464	.....T.....V.....N.....	100
PPV7-MG543463	.....T.....V.....N.....	100
PPV7-MK092494	.....S.....T.....V.....	100
PPV7-MK092479	.....T.....V.....I.....	100
PPV7-MK092478	.....T.....V.....I.....	100
PPV7-MG543462	.....T.....V.....N.....	100
PPV7-MH422962	.....S.....T.R.....V.....N.....	100
PPV7-MK092481	.....HT.....V.....I.....	100
PPV7-MG543469	.....T.....V.....N.....	100
PPV7-MG543468	.....T.....V.....N.....	100
PPV7-MG543459	.....T.....I.....N.....	100
PPV7-MG902949	.....K.R.E.....V.....	100
PPV7-MK484101	.....S.....T.....V.....N.....	100
PPV7-MK092490	.....A.T.....P.....	100
PPV7-MG543472	.....V.....	100
PPV7-MG543465	.....	100
PPV7-MG543460	.....P.....T.....I.....T.....	100
PPV7-MG543461	.....	100
PPV7-MG543471	.....	100
PPV7-MK092480	.....T.P.....R.....	100
PPV7-MK092477	.....T.P.....R.....	100
PPV7-MK092485	.....NS.....T.P.....R.....	100
PPV7-MK092495	.....S.....T.P.....R.....	100
PPV7-MG543467	.....P.....T.....I.....	100
PPV7-20	.....T.....	100
PPV7-106	.....A.T.....V.....	100
PPV7-152	.....T.....L.V.....N.....	100
PPV7-377	.....T.....V.....I.....N.....	100
PPV7-717	.....T.....R.E.....	100
PPV7-NC040562	1YSLGATDDLLETGYHNWYEDTLWRSWYVAYKEGLVPKRNVTTKKEIGNSWDRLLTPRYLWSAPATAPETNWTWGWNTNKGKATAYPTAGTTWPHDSDA	200
PPV7-MH422967	.....T.....PTTA...V...S...T...I...T...---KP.....AG	200
PPV7-MK092493	.....T.....PTTA...V...S...T...I...T...---KP.....AG	200
PPV7-MK092482	.....T.....PTTA...V...S...T...I...T...---KP.....AG	200
PPV7-MK092492	.....T.....I..PTTA...V...S...T...I...T...---KP.....AG	200
PPV7-MK092488	.....T.....PTTA...V...S...T...I...T...---KP.....AG	200
PPV7-MT747168	.....S.....PTTA...V...S...T...I...T...---KP.....AG	200
PPV7-MK092489	.....T.....PTTA...V...S...T...I...T...---KP.....AG	200
PPV7-MK092484	.....T.....PTTA...V...S...T...I...T...---KP.....AG	200
PPV7-MK092487	.....TI.....PTTA...V...S...T...I...T...---KP.....AG	200
PPV7-MH422966	.....T..I...PI..Q...-RSNAG...L..T...I...T...---KP.....AG	200
PPV7-MH422964	.....T.....Q...-RSQVS..AS...L..T...T...---KP.....AG	200
PPV7-MH422965	.....E.....D.P...V...N...T.I...T.P.I.T.P.....G	200
PPV7-MH422963	.....T.....TTTA...V...S...T...I...T...---KP.....AG	200
PPV7-MK092496	.....T.....PTTA...V...S...T...I...T...---KP.....AG	200
PPV7-MG543470	.....T.....PTTA...V...S...T...I...T...---KP.....G	200
PPV7-MK484102	.....T.....E.....IP...V...N...K...I...V...G..G.Q.....G	200
PPV7-MK484100	.....T.....E.....P..D.V...N..L..I.R...I...V...G..G.Q.....G	200
PPV7-MK092486	.....T.....H.....E.....P...V...N...K...I...I.V...S..DG-.....G	200
PPV7-MK092483	.....T.GI...C...E.....P...V...N...K...I...V...G..DG-.....G	200
PPV7-MK092491	.....I.....NE.....P...V...N...I...V...G..TG.QN.....G	200
PPV7-MG543466	.....T.....E.....P...V...N...K...I...V...G..G.Q.....G	200
PPV7-MG543457	.....F.....S.....E.....D.P...V...N..L..K...I...V...G..TG.QN.....G	200
PPV7-MG543456	.....F.....S.....E.....D.P...V...N..L..K...I...V...G..TG.QN.....G	200
PPV7-MG543458	.....F.....S.....E.....D.P...V...N..L..K...I...V...G..TG.QN.....G	200
PPV7-MG543464	.....F.....S.....E.....D.P...V...N..L..K...I...V...G..TG.QN.....G	200

PPV7-MG543463 . . . . . F . . . . . S . . . . . E . . . . . D . P . . . V . . . N . . L . . K . . . . . I . . . . . V . . . G . . TG . QN . . . . . G 200  
 PPV7-MK092494 . . . . . F . . . . . S . . . . . E . . . . . D . P . . . V . . . N . . L . . K . . . . . I . . . . . V . . . G . . TG . QN . . . . . G 200  
 PPV7-MK092479 . . . . . F . . . . . S . . . . . E . . . . . D . P . . . V . . . N . . L . . K . . . . . I . . . . . V . . . G . . TG . QN . . . . . G 200  
 PPV7-MK092478 . . . . . F . . . . . S . . . . . E . . . . . D . P . . . V . . . N . . L . . K . . . . . I . . . . . V . . . G . . TG . QN . . . . . G 200  
 PPV7-MG543462 . . . . . T . . . . . I . . . . . E . . . . . D . P . . . V . . . N . . L . . K . . . . . I . . . . . V . . . G . . TG . QN . . . . . G 200  
 PPV7-MH422962 . . . . . T . . . . . I . . . . . E . . . . . D . P . . . V . . . N . . L . . K . . . . . I . . . . . V . . . G . . TG . QN . . . . . G 200  
 PPV7-MK092481 . . . . . F . . . . . S . . . . . E . . . . . D . P . . . V . . . N . . L . . K . . . . . I . . . . . V . . . G . . TG . QN . . . . . G 200  
 PPV7-MG543469 . . . . . F . . . . . S . . . . . E . . . . . D . P . . . V . . . N . . L . . K . . . . . I . . . . . V . . . G . . TG . QN . . . . . 200  
 PPV7-MG543468 . . . . . T . . . . . I . . . . . E . . . . . D . P . . . V . . . N . . L . . K . . . . . I . . . . . V . . . G . . TG . QN . . . . . 200  
 PPV7-MG543459 . . . . . F . . . . . S . . . . . E . . . . . D . P . . . V . . . N . . L . . K . . . . . I . . . . . V . . . G . . TG . QN . . . . . 200  
 PPV7-MG902949 . . . . . F . . . . . S . . . . . E . . . . . D . P . . . V . . . N . . L . . K . . . . . I . . . . . V . . . G . . TG . QN . . . . . AG 200  
 PPV7-MK484101 . . . . . T . . . . . I . . . . . E . . . . . D . P . . . V . . . N . . L . . K . . . . . I . . . . . V . . . PG . . TG . QN . . . . . AG 200  
 PPV7-MK092490 . . . . . F . . . . . S . . . . . E . . . . . D . P . . . V . . . N . . L . . K . . . . . I . . . . . V . . . G . . TG . QN . . . . . PG 200  
 PPV7-MG543472 . . . . . F . . . . . S . . . . . E . . . . . D . P . . . V . . . N . . L . . K . . . . . I . . . . . V . . . G . . TG . QN . . . . . G 200  
 PPV7-MG543465 . . . . . F . . . . . S . . . . . E . . . . . D . P . . . V . . . N . . L . . K . . . . . I . . . . . V . . . G . . TG . QN . . . . . G 200  
 PPV7-MG543460 . . . . . T . . . . . I . . . . . E . . . . . D . P . . . V . . . N . . L . . K . . . . . I . . . . . V . . . G . . TG . QN . . . . . G 200  
 PPV7-MG543461 . . . . . F . . . . . S . . . . . E . . . . . D . P . . . V . . . N . . L . . K . . . . . I . . . . . V . . . G . . TG . QN . . . . . 200  
 PPV7-MG543471 . . . . . F . . . . . S . . . . . E . . . . . D . P . . . V . . . N . . L . . K . . . . . I . . . . . V . . . G . . TG . QN . . . . . 200  
 PPV7-MK092480 . . . . . M . T . . . I . . . . . PI . . Q . . . . . SDA . G . . . . . L . . K . . . . . T . . . . . TV . . . . . PG . . . . . A . . . . . D 200  
 PPV7-MK092477 . . . . . M . T . . . I . . . . . PI . . Q . . . . . SNA . G . . . . . L . . K . . . . . T . . . . . TV . . . . . PG . . . . . A . . . . . D 200  
 PPV7-MK092485 . . . . . M . T . . . I . . . . . PI . . Q . . . . . SNA . G . . . . . L . . K . . . . . T . . . . . TV . . . . . PG . . . . . A . . . . . D 200  
 PPV7-MK092495 . . . . . M . T . . . I . . . . . PI . . Q . . . . . SNA . G . . . . . L . . K . . . . . T . . . . . TT . . . . . PG . . . . . E 200  
 PPV7-MG543467 . . . . . T . . . . . I . . . . . E . . . . . D . P . . . V . . . N . . L . . K . . . . . I . . . . . V . . . G . . TG . QN . . . . . G 200  
 PPV7-20 . . . . . F . . . . . S . . . . . E . . . . . D . P . . . V . . . N . . L . . K . . . . . I . . . . . V . . . G . . DG . . . . . G 200  
 PPV7-106 . . . . . T . . . . . I . . . . . E . . . . . D . P . . . V . . . N . . L . . K . . . . . I . . . . . V . . . G . . G . . Q . . . . . G 200  
 PPV7-152 . . . . . F . . . . . S . . . . . E . . . . . D . P . . . V . . . N . . L . . K . . . . . I . . . . . V . . . G . . TG . QN . . . . . G 200  
 PPV7-377 . . . . . F . . . . . S . . . . . E . . . . . D . P . . . V . . . N . . L . . K . . . . . I . . . . . V . . . G . . TGTQN . . . . . G 200  
 PPV7-717 . . . . . F . . . . . S . . . . . E . . . . . D . P . . . V . . . N . . L . . K . . . . . I . . . . . V . . . S . . TG . . . . . AG 200

PPV7-NC040562 TEQRAAPAGCFWDPLTNPDSIQELRPGKNAMSHHKKTHGADEHCWYNLDSLVLKFPYTPESGYSHNIRDKKYGPPGSRIVNENQHPSPQTSISTENHK 300  
 PPV7-MH422967 . . . . . V . . . . . F . . . . . V . . . . . E . . . . . Q . . . . . T . . . . . T . . . . . SDQS . . . . . 300  
 PPV7-MK092493 . . . . . V . . . . . F . . . . . E . . . . . Q . . . . . T . . . . . T . . . . . SDQS . . . . . 300  
 PPV7-MK092482 . . . . . V . . . . . F . . . . . E . . . . . Q . . . . . T . . . . . T . . . . . SDQS . . . . . 300  
 PPV7-MK092492 . . . . . V . . . . . F . . . . . E . . . . . Q . . . . . T . . . . . T . . . . . SDQS . . . . . 300  
 PPV7-MK092488 . . . . . V . . . . . F . . . . . E . . . . . Q . . . . . T . . . . . T . . . . . SDQS . . . . . 300  
 PPV7-MT747168 . . . . . V . . . . . F . . . . . E . . . . . Q . . . . . T . . . . . T . . . . . SDQS . . . . . 300  
 PPV7-MK092489 . . . . . V . . . . . F . . . . . S . . . . . E . . . . . Q . . . . . T . . . . . R . . . . . T . . . . . SDQSN 300  
 PPV7-MK092484 . . . . . V . . . . . F . . . . . E . . . . . Q . . . . . T . . . . . T . . . . . SDQS . . . . . 300  
 PPV7-MK092487 . . . . . V . . . . . F . . . . . E . . . . . T . . . . . T . . . . . SDQS . . . . . 300  
 PPV7-MH422966 . . . . . V . . . . . F . . . . . L . . . . . E . . . . . Q . . . . . T . . . . . T . . . . . SDQS . . . . . 300  
 PPV7-MH422964 . . . . . V . . . . . F . . . . . E . . . . . Q . . . . . T . . . . . T . . . . . SDQS . . . . . 300  
 PPV7-MH422965 . . . . . V . . . . . F . . . . . K . . . . . H . . . . . V . . . . . SDQN . . . . . 300  
 PPV7-MH422963 . . . . . V . . . . . F . . . . . EG . . . . . Q . . . . . Y . . . . . Q . . . . . L . . . . . 300  
 PPV7-MK092496 . . . . . V . . . . . QN . . . . . F . . . . . L . . . . . 300  
 PPV7-MG543470 . . . . . V . . . . . F . . . . . Q . . . . . T . . . . . V . . . . . F . . . . . L . . . . . 300  
 PPV7-MK484102 . . . . . V . . . . . F . . . . . S . . . . . QN . . . . . F . . . . . L . . . . . 300  
 PPV7-MK484100 . . . . . V . . . . . F . . . . . S . . . . . QN . . . . . F . . . . . L . . . . . 300  
 PPV7-MK092486 . . . . . V . . . . . F . . . . . QN . . . . . F . . . . . L . . . . . 300  
 PPV7-MK092483 . . . . . V . . . . . F . . . . . S . . . . . QN . . . . . R . . . . . F . . . . . L . . . . . 300  
 PPV7-MK092491 . . . . . V . . . . . F . . . . . Q . . . . . F . . . . . L . . . . . 300  
 PPV7-MG543466 . . . . . V . . . . . F . . . . . N . . . . . F . . . . . L . . . . . 300  
 PPV7-MG543457 . . . . . V . . . . . F . . . . . Q . . . . . T . . . . . V . . . . . F . . . . . L . . . . . 300  
 PPV7-MG543456 . . . . . V . . . . . F . . . . . Q . . . . . T . . . . . V . . . . . F . . . . . L . . . . . 300  
 PPV7-MG543458 . . . . . V . . . . . F . . . . . Q . . . . . T . . . . . V . . . . . F . . . . . L . . . . . 300  
 PPV7-MG543464 . . . . . V . . . . . F . . . . . Q . . . . . T . . . . . V . . . . . F . . . . . L . . . . . 300  
 PPV7-MG543463 . . . . . V . . . . . F . . . . . Q . . . . . T . . . . . V . . . . . F . . . . . L . . . . . 300  
 PPV7-MK092494 . . . . . V . . . . . F . . . . . Q . . . . . T . . . . . V . . . . . F . . . . . L . . . . . 300  
 PPV7-MK092479 . . . . . V . . . . . F . . . . . M . R . . . . . QN . . . . . F . . . . . L . . . . . 300  
 PPV7-MK092478 . . . . . V . . . . . F . . . . . H . . . . . QN . . . . . F . . . . . L . . . . . 300  
 PPV7-MG543462 . . . . . V . . . . . F . . . . . QN . . . . . F . . . . . L . . . . . 300  
 PPV7-MH422962 . . . . . V . . . . . F . . . . . E . . . . . Q . . . . . T . . . . . T . . . . . SDQS . . . . . 300  
 PPV7-MK092481 . . . . . V . . . . . F . . . . . E . . . . . Q . . . . . T . . . . . T . . . . . SDQS . . . . . 300  
 PPV7-MG543469 . . . . . V . . . . . F . . . . . C . . . . . E . . . . . Q . . . . . T . . . . . T . . . . . SDQS . . . . . 300  
 PPV7-MG543468 . . . . . V . . . . . F . . . . . C . . . . . G . . . . . Q . . . . . D . P . . . . . 300  
 PPV7-MG543459 . . . . . V . . . . . F . . . . . EG . . . . . Q . . . . . Q . . . . . L . . . . . 300  
 PPV7-MG902949 . . . . . V . . . . . F . . . . . QN . . . . . F . . . . . S . . . . . L . . . . . 300  
 PPV7-MK484101 . . . . . V . . . . . F . . . . . QN . . . . . F . . . . . S . . . . . L . . . . . 300  
 PPV7-MK092490 . . . . . V . . . . . F . . . . . R . . . . . N . . . . . Q . . . . . T . . . . . V . . . . . F . . . . . L . . . . . 300  
 PPV7-MG543472 . . . . . V . . . . . F . . . . . Q . . . . . T . . . . . V . . . . . F . . . . . L . . . . . 300  
 PPV7-MG543465 . . . . . V . . . . . F . . . . . Q . . . . . T . . . . . V . . . . . F . . . . . L . . . . . 300  
 PPV7-MG543460 . . . . . V . . . . . F . . . . . Q . . . . . T . . . . . V . . . . . F . . . . . L . . . . . 300  
 PPV7-MG543461 . . . . . V . . . . . F . . . . . EG . . . . . Q . . . . . Q . . . . . L . . . . . 300  
 PPV7-MG543471 . . . . . V . . . . . F . . . . . EG . . . . . E . . . . . Q . . . . . 300  
 PPV7-MK092480 . . . . . P . . . . . P . . . . . GG . . . . . E . . . . . Q . . . . . 300  
 PPV7-MK092477 . . . . . P . . . . . EG . . . . . E . . . . . Q . . . . . 300  
 PPV7-MK092485 . . . . . P . . . . . EG . . . . . E . . . . . Q . . . . . 300  
 PPV7-MK092495 . . . . . P . . . . . C . . . . . G . . . . . Q . . . . . D . R . . . . . 300  
 PPV7-MG543467 . . . . . P . . . . . C . . . . . G . . . . . Q . . . . . D . P . . . . . 300  
 PPV7-20 . . . . . V . . . . . F . . . . . QN . . . . . F . . . . . L . . . . . 300  
 PPV7-106 . . . . . V . . . . . F . . . . . S . . . . . QN . . . . . F . . . . . L . . . . . 300  
 PPV7-152 . . . . . V . . . . . F . . . . . Q . . . . . T . . . . . V . . . . . F . . . . . L . . . . . 300  
 PPV7-377 . . . . . V . . . . . F . . . . . Q . . . . . T . . . . . V . . . . . F . . . . . L . . . . . 300  
 PPV7-717 . . . . . V . . . . . F . . . . . QN . . . . . F . . . . . L . . . . . 300

PPV7-NC040562 VFIEHDVNPVNLNAPIVPIQWFWIELERNLIEDKKIEKPLGWPGTEWATPKYPPMNNFKIGIPLTDENGLVKTVTMGCFRNSIHLSCKRRSRMFAPTW 400  
 PPV7-MH422967 . . . . . I . . . . . V . . . . . 400  
 PPV7-MK092493 . . . . . I . . . . . V . . . . . 400

PPV7-MK092482	I . . . . . V . . . . . T . . . . .	400
PPV7-MK092492	I . T . . . . . V . . . . . A . . . . .	400
PPV7-MK092488	I . T . . . . . V . . . . . A . . . . .	400
PPV7-MT747168	I . T . . . . . V . . . . .	400
PPV7-MK092489	I . T . . . . . V . . . . . A . . . . .	400
PPV7-MK092484	I . T . . . . . V . . . . . A . . . . .	400
PPV7-MK092487	I . T . . . . . V . . . . . A . . . . .	400
PPV7-MH422966	I . . . . . V . . . . .	400
PPV7-MH422964	I . . . . . V . . . . .	400
PPV7-MH422965	I . . . . . V . . . . .	400
PPV7-MH422963	I . . . . . V . . . . . Y . . L . . . . .	400
PPV7-MK092496	I . . . . . V . . . . . L . . . . .	400
PPV7-MG543470	I . . . . . V . . . . . H . . . . . I . . L . . . . .	400
PPV7-MK484102	T . . . . . V . . . . .	400
PPV7-MK484100	T . . . . . V . . . . .	400
PPV7-MK092486	K . . . . . V . . . . .	400
PPV7-MK092483	T . . . . . V . . . . . N . . . . .	400
PPV7-MK092491	T . . . . . D . . . . . V . . . . .	400
PPV7-MG543466	I . . . . . V . . . . . H . . . . . I . . L . . . . .	400
PPV7-MG543457	I . . . . . V . . . . . H . . . . . I . . L . . . . .	400
PPV7-MG543456	I . . . . . V . . . . . H . . . . . I . . L . . . . .	400
PPV7-MG543458	I . . . . . V . . . . . H . . . . . I . . L . . . . .	400
PPV7-MG543464	I . . . . . V . . . . . H . . . . . I . . L . . . . .	400
PPV7-MG543463	I . . . . . V . . . . . H . . . . . I . . L . . . . .	400
PPV7-MK092494	I . . . . . V . . . . . H . . . . . I . . L . . . . .	400
PPV7-MK092479	I . . . . . V . . . . . H . . . . . A . . I . . L . . . . .	400
PPV7-MK092478	I . . . . . V . . . . . H . . . . . I . . L . . . . .	400
PPV7-MG543462	I . . . . . V . . . . . H . . . . . I . . L . . . . .	400
PPV7-MH422962	I . T . . . . . V . . . . . D . . . . .	400
PPV7-MK092481	I . . . . . V . . . . .	400
PPV7-MG543469	I . . . . . V . . . . .	400
PPV7-MG543468	I . . . . . V . . . . . K . . . . .	400
PPV7-MG543459	I . . . . . V . . . . . L . . . . .	400
PPV7-MG902949	I . . . . . V . . . . . H . . . . . I . . L . . . . .	400
PPV7-MK484101	I . . . . . V . . . . . H . . . . . I . . L . . . . .	400
PPV7-MK092490	I . . . . . V . . . . . H . . . . . I . . L . . . . .	400
PPV7-MG543472	I . . . . . V . . . . . H . . . . . I . . L . . . . .	400
PPV7-MG543465	I . . . . . V . . . . . H . . . . . I . . L . . . . .	400
PPV7-MG543460	I . . . . . V . . . . . H . . . . . I . . L . . . . .	400
PPV7-MG543461	I . . . . . V . . . . . L . . . . .	400
PPV7-MG543471	I . . . . . V . . . . .	400
PPV7-MK092480	Q . . . . . KS . . . . . K . . I . . . . .	400
PPV7-MK092477	Q . . . . . KS . . . . . K . . I . . . . .	400
PPV7-MK092485	Q . . . . . T . . . . . K . . I . . . . .	400
PPV7-MK092495	K . . . . . I . . . . . K . . I . . . . .	400
PPV7-MG543467	K . . . . .	400
PPV7-20	L . . . . .	400
PPV7-106	T . . . . . V . . . . .	400
PPV7-152	V . . . . . H . . . . . I . . L . . . . .	400
PPV7-377	V . . . . . H . . . . . I . . L . . . . .	400
PPV7-717	K . . . . . L . . . . .	400

PPV7-NC040562	GPMSVEMTHGIDSFAVLPTVRYRTGGARRSWQAKTRDAKDGQTEQTYWQWNPYGTGTYSITTTSTYTTTTSRK	474
PPV7-MH422967	R . . TR. KEPQ. P . . . . M . . . S . . . . .	474
PPV7-MK092493	R . . TR. KEPQ. P . . . . M . . . S . . . . .	474
PPV7-MK092482	R . . TR. KESQ. P . . . . M . . . S . . . . .	474
PPV7-MK092492	R . . TR. KEAQ. P . . . . M . . . S . . . . .	474
PPV7-MK092488	R . . TR. KEPQ. P . . . . M . . . S . . . . N . . . . .	474
PPV7-MT747168	R . . TR. KEPQ. P . . . . M . . . S . . . . .	474
PPV7-MK092489	R . . TR. K. PQ. P . . . . M . . . . A . . . . .	474
PPV7-MK092484	R . . VR. Q. PQ. P . . . . M . . . A . . . . .	474
PPV7-MK092487	R . . VR. Q. QQ. P . . . . E . . . . .	474
PPV7-MH422966	R . . TR. KEPQ. P . . . . M . . . S . . . . .	474
PPV7-MH422964	R . . TR. KEPQ. P . . . . M . . . S . . . . .	474
PPV7-MH422965	R . . VR. Q. QQ. P . . . . M . . . . .	474
PPV7-MH422963	Q . . . . P . . . . K . . . . .	474
PPV7-MK092496	R . . VR. Q. QQ. P . . . . E . . . . .	474
PPV7-MG543470	R . . T . . Q . . Q . P . . . . .	474
PPV7-MK484102	R . . VR. QHQHHS . . . . .	474
PPV7-MK484100	R . . VR. QHQHHS . . . . .	474
PPV7-MK092486	R . . GVR. Q. QQ. P . . . . E . . . . A . . . . .	474
PPV7-MK092483	R . . VR. Q. QQ. P . . . . E . . . . .	474
PPV7-MK092491	T . . . . R . . VR. K. QQ. P . . . . E . . . . .	474
PPV7-MG543466	Q . . . . Q . . P . . . . .	474
PPV7-MG543457	R . . T . . Q . . Q . P . . . . .	474
PPV7-MG543456	R . . T . . Q . . Q . P . . . . .	474
PPV7-MG543458	R . . T . . Q . . Q . P . . . . .	474
PPV7-MG543464	R . . T . . Q . . Q . P . . . . .	474
PPV7-MG543463	R . . T . . Q . . Q . P . . . . .	474
PPV7-MK092494	R . . T . . Q . . Q . P . . . . .	474
PPV7-MK092479	R . . T . . Q . P . . P . . . . .	474
PPV7-MK092478	R . . T . . Q . P . . P . . . . .	474
PPV7-MG543462	R . . T . . Q . . . . P . . . . .	474
PPV7-MH422962	R . . TR. KEPQ. P . . . . M . . . S . . . . .	474
PPV7-MK092481	G . . R . . TR. KEPQ. P . . . . M . . . S . . . . .	474
PPV7-MG543469	R . . TR. KEPQ. P . . . . M . . . S . . . . .	474
PPV7-MG543468	R . . TR. KEPQ. P . . . . M . . . S . . . . .	474

PPV7-MG543459	..... Q . . . P . . . . .	474
PPV7-MG902949	..... R . . VR. Q. QQ. P. . . . . M . . . . . Q . . . . .	474
PPV7-MK484101	..... R . . VR. Q. QQ. P. . . . . M . . . . .	474
PPV7-MK092490	..... G . . . . . R . . VR. Q. QQ. P. . . . . E . . . . .	474
PPV7-MG543472	..... R . . T . . Q . . Q. P. . . . .	474
PPV7-MG543465	..... R . . T . . Q . . Q. P. . . . .	474
PPV7-MG543460	..... R . . T . . Q . . Q. P. . . . .	474
PPV7-MG543461	..... R . . T . . Q . . Q. P. . . . .	474
PPV7-MG543471	.....	474
PPV7-MK092480	..... VQ. Q. P. KR. . . . . K . . . S . . . . . I . . . . .	474
PPV7-MK092477	..... VQ. Q. P. KR. . . . . K . . . S . . . . . I . . . . .	474
PPV7-MK092485	..... VQ. Q. P. KR. . . . . M . . . . . A . . . . .	474
PPV7-MK092495	..... S . . . . . A . . . . .	474
PPV7-MG543467	.....	474
PPV7-20	..... R . . VR. Q. QQ. P. . . . . E . . . . .	474
PPV7-106	..... R . . VR. Q. PQ. S. . . . . E . . . . .	474
PPV7-152	..... R . . T . . Q . . Q. P. . . . .	474
PPV7-377	..... R . . T . . Q . . Q. P. . . . .	474
PPV7-717	..... R . . VR. Q. QQ. P. . . . . M . . . . .	474