

# An Overview of Morbilliviruses and the Wildlife Spillover Risk of Peste des Petits Ruminants from Bharal (*Pseudois nayaur*) to Human Hotspots and Vulnerable Species in the Tibetan Plateau and Adjacent Himalayan-Sichuan-Yunnan Region

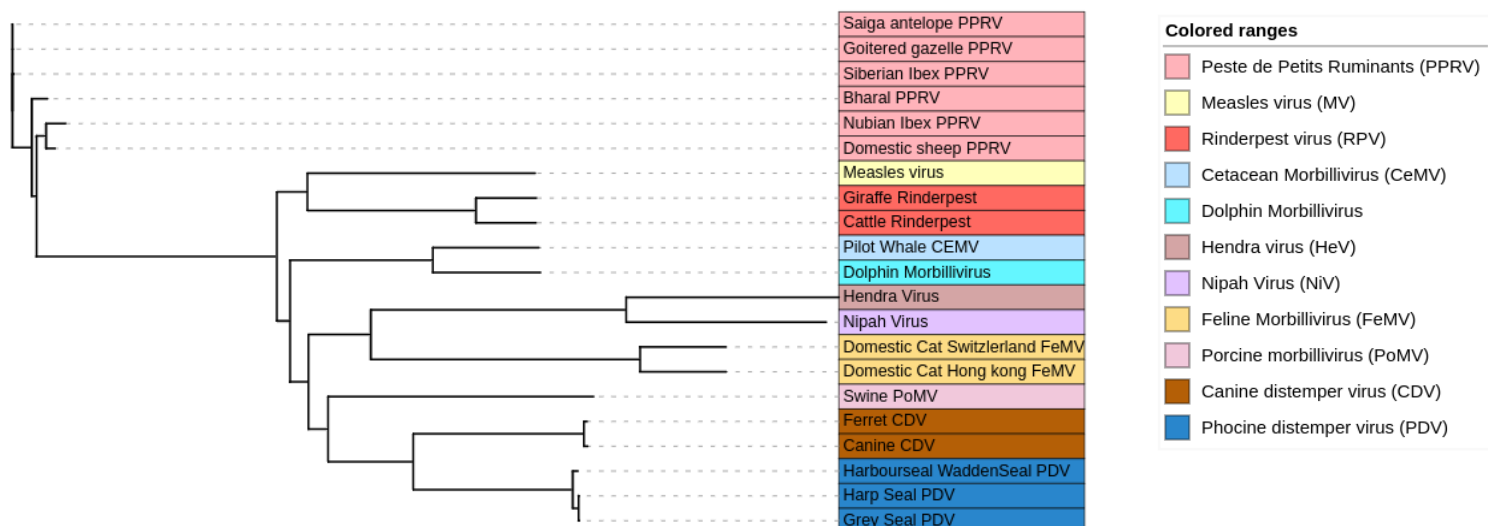
## Introduction and aim:

The genus Morbillivirus belongs to the viral family paramyxoviridae which are enveloped viruses with non-segmented negative RNA genomes, comprised of N,P,M,F, H and L proteins (Sourimant and Plemper, 2016)(De Vries et al, 2015) that have an estimated size of 15-16 kb (Bailey et al, 2005) . Genetic and structural analyses indicate that morbilliviruses are able to exploit receptor variability across species and are thus able to adapt to – and emerge in new hosts (Ohishi et al., 2010). These airborne viruses are highly infectious and cause severe clinical manifestation in human and animal hosts such as respiratory, neurological and gastrointestinal symptoms aswell as immunosuppression leading to fatal infection in many affected hosts. As such, Morbilliviruses have been associated with mass die-offs in and have led to large-scale epidemics in both terrestrial and marine mammal populations. There are believed to be several genera of morbilliviruses, of which the main ones include: Measles Virus (MeV), Canine Distemper Virus (CDV), Rinderpest Virus (RPV) which previously infected cattle but was declared eradicated in 2011, Peste de petits ruminants (PPRV) affecting ruminants such as sheep and Goats, Phocine distemper virus (PDV) affecting pinnipeds, Dolphin morbillivirus (DMV) and Cetacean Morbillivirus (CeMV). Novel strains however appear in various host species frequently such as Feline morbillivirus (FeMV) and Bat morbillivirus..

Thus, the objectives of the following paper are to construct a phylogenetic tree of morbilliviruses using RNA polymerase sequences and compare genetic similarity, and based on the results, select a virus and identify focal mammalian host species and related vulnerable species at risk of spillover events. Then, assess spatial overlap between the focal host and selected species in R (version 4.3.3) using IUCN shape data (IUCN, 2024). Areas of high human population density will be analysed to identify potential hotspots for zoonotic spillover. Monitoring and mitigation strategies to minimize the risk of viral spillover events will be proposed based on the findings.

## Methods and Results:

To compare the genetic similarity between *Morbillivirus* strains, 20 viral strains were identified from the NCBI database from various hosts and locations, and their L genes were isolated using ORF Finder. The sequences were then aligned using Clustal Omega, and poorly aligned regions were removed using Jalview to focus on conserved sections. The L genes were specifically chosen for comparison because they are highly conserved over time and represent the longest section of the viral RNA genome (approx 6kb) , providing robust data for alignment analysis. Additionally, Hendra and Nipah virus strains were included as outgroups to help distinguish *Morbillivirus* strains from each other. -For alignment results, **see appendix--**.

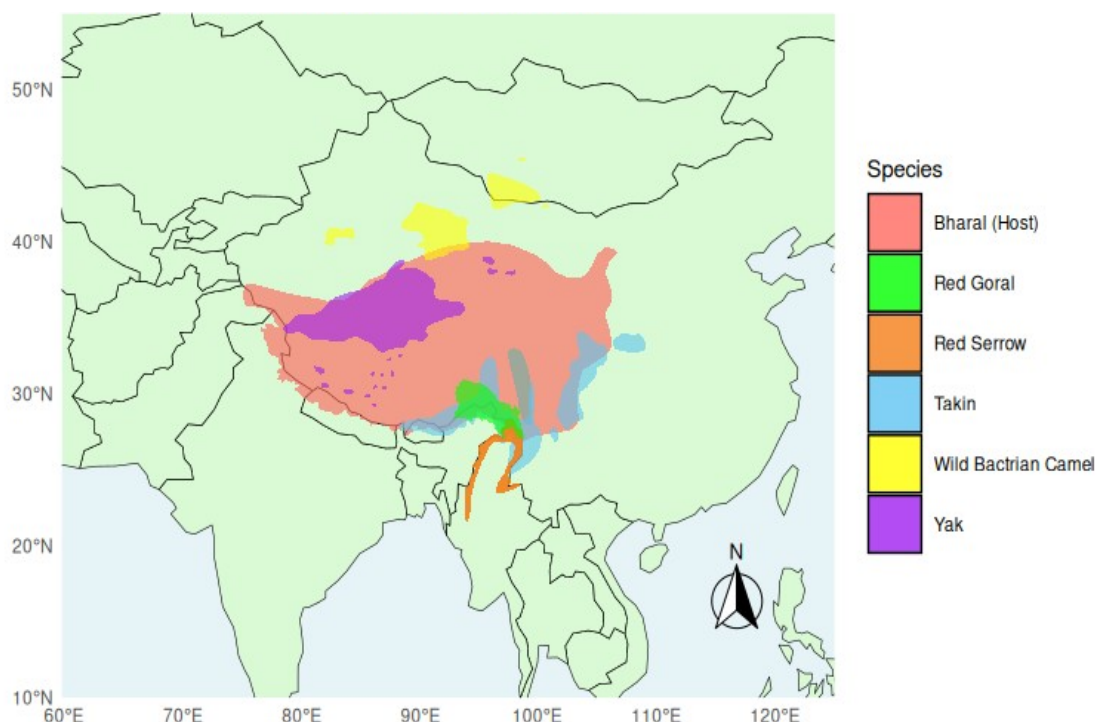


The alignment results reveal the sequence relationships between morbillivirus strains, with branch lengths indicating genetic divergence. Clusters of genetically similar viruses are visible, such as the PDV and CDV groups. This genetic similarity, but overall distinction, has also been confirmed through studies involving genetic analysis (Kennedy et al., 2019). Similarly, the PPRV viral strains show high levels of genetic similarity to one another. In contrast, significant divergence is observed in viruses such as FeMV and the outgroup viruses HeV and NiV. This aligns with the literature, as Hendra and Nipah viruses belong to the Henipavirus genus within the Paramyxoviridae family. While FeMV is classified as a morbillivirus, genetic analyses suggests genetic distance within the genus (De Vries et al., 2015).

Based on these alignment results, a decision was made to analyse the Peste de petits ruminants (PPRV) Virus, due to its high sequence homology despite isolation in various genetically distant small ruminants and wild ungulates, indicating high transmission risk across species. The Bharal – Blue sheep – (*Pseudois nayaur*) was then selected as a focal host species to assess potential zoonotic spill over risk, due to the virus having been isolated in it previously, and due to the large range it covers, spanning a large span of the Tibetan plateau, and areas of inner China (Harris R.B, 2014).

5 additional species that were rated as Vulnerable or above by IUCN with overlapping ranges and were then selected based on different criteria via the Onezoom Tree of life tool (Onezoom, 2024) the overlap ranges were also quantified. The Takin, Red Serrow and red goral were selected due genetic similarities, sharing recent common ancestry. Additionally these options were justified by the fact that PPRV strains had previously been isolated in Saiga antelopes and Goitered gazelles, which have a more distant ancestry to Bharal than those selected.

It was also then decided to include Yak and Wild Bactrian camels in the overlap analysis. Previous Studies have observed natural and experimental infection of PPRV in to Bovid and Camilidae species with clinical manifestation (Schulz et al, 2019) (Rahman et al, 2020). With a recent study involving dromedaries having observed further transmission to sheep and goats (Saeed et al, 2022). Potential concern of pathogenic crossover from Bharal to members of these families was therefore justified.



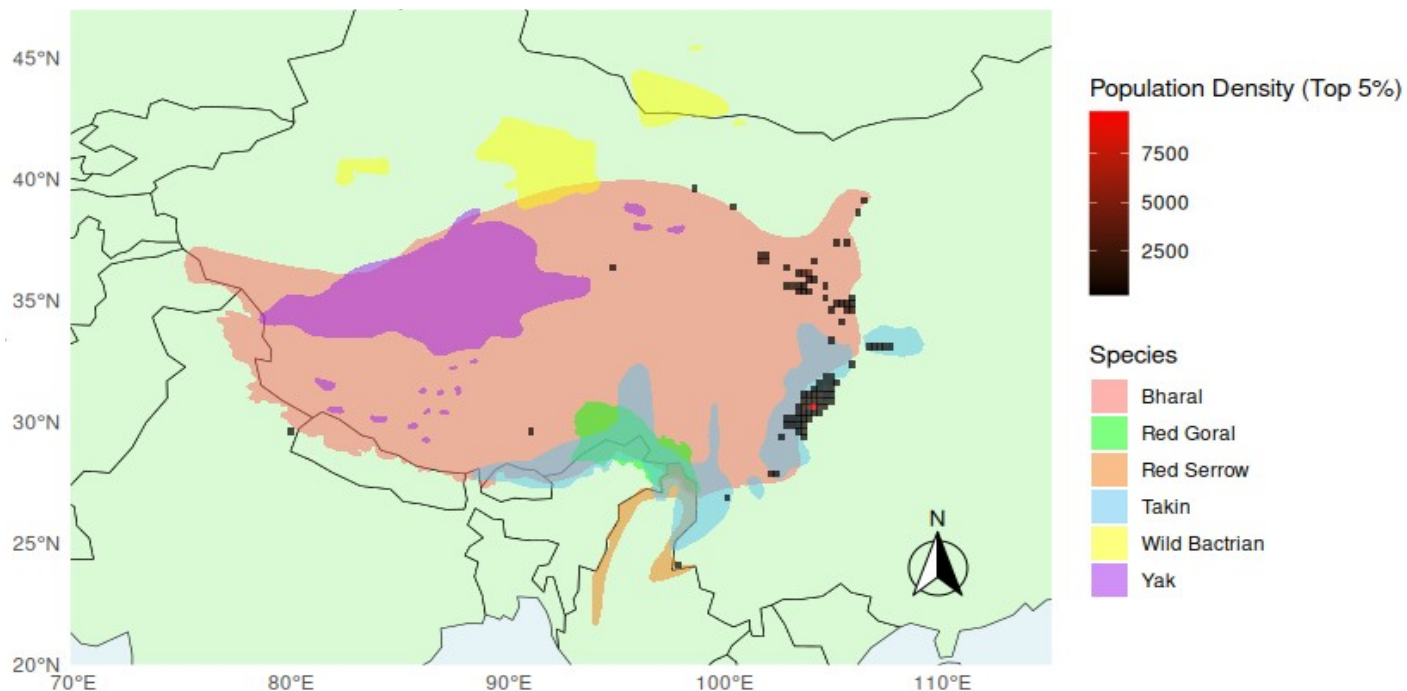
**Figure:** A map of Central Asia with overlapping species range data. It highlights potential areas of significant species overlap and increased risk of interspecies transmission.

Species of concern	IUCN Redlist Status (2024)	Proportion of overlap with host species	Overlap Range (Km <sup>2</sup> )
Bharal ( <i>Pseudois nayaur</i> ) – Host species	Least Concern	1	2858577.5
Takin ( <i>Budorcas taxicolor</i> )	Vulnerable	0.66599514	293331.62
Burmese Red Serrow ( <i>Capricornis rubidus</i> )	Vulnerable	0.11184868	9661.52
Red Goral ( <i>Naemorhedus Baileyi</i> )	Vulnerable	0.88241258	109902.2
Yak ( <i>Bos mutus</i> )	Vulnerable	0.98317031	462044.43
Wild Camel ( <i>Camelus ferus</i> )	Critically Endangered	0.08179438	16475.85

**Table:** Conservation status of species of concern, aswell as proportion of and overlap range with host species per species compared.

The shape data indicates a geographic region of concern with increased cross-species transmission risk where multiple species ranges overlap on the Burmese border and Yunnan and Sichuan Chinese provinces. Highlighting a particular area of concern in regards to Interspecies transmission risk.

The map was then further modified using NASA 2020 population density data (NASA, 2020). To indicate how species ranges overlap with areas of high human population, and indicate areas of high potential zoonotic spillover risk.



**Figure:** A map displaying human population data and species ranges was created, where raster data representing the top 95% of population densities per square kilometer were selected to identify human hotspots. A gradient was applied to these rasters to highlight areas with the highest human populations within these hotspots.

Species	Number of Zoonotic Spillover Hotspots in range (km <sup>2</sup> )	Minimum Population density in range (per Km <sup>2</sup> )	Maximum Population density in range (per Km <sup>2</sup> )	Median Population Density in range (Per Km <sup>2</sup> )
Bharal ( <i>Pseudois nayaur</i> ) – Host species	55	0	3171.3	1.67
Takin ( <i>Budorcas taxicolor</i> )	56	0.019	9660.5	1.181
Burmese Red Serrow ( <i>Capricornis rubidus</i> )	1	0.372	281.32	1.656
Red Goral ( <i>Naemorhedus Baileyi</i> )	0	0.019	69.98	2.848
Yak ( <i>Bos mutus</i> )	0	0	6.853	0
Wild Camel ( <i>Camelus ferus</i> )	0	0	38.59	2.546

**Table:** The above table describes the number of population hotspots that fall within species ranges, aswell as the min, max and median human population densities across all species.

### Discussion of Results, an assessment of risk and proposed mitigation strategies:

The above data displays potential risk areas for not only transmission from the host species to overlapping vulnerable species, but also from potential terrestrial hosts to human populations. Particular areas of risk include the Sichuan, and Yunnan Provinces aswell as areas in north Myanmar. Amongst these an area that aligns with the location of Chengdu city, provides an area of particular zoonotic spillover risk with a maximum population density of 9660.5 per Km<sup>2</sup>. Multiple population hotspots can also be found in the Ningxia and Qinghai regions of China, further representing risk areas.

Across the entire host range however, human population density appears to be very low. With a median value of 1.67 per km<sup>2</sup>. Areas with lower zoonotic spillover risks appear to be across the Tibetan Plateau, which also coincides with the ranges Yak and Bactrian Camels, where both have a max population of 6.853 and 38.59 respectively across their entire ranges. Additionally Given the large ranges Yaks and Bactrian Camels occupy despite their low population numbers (both under 10000 individuals) (IUCN, 2024), contact and inoculation with PPRV from Bharals is unlikely. However, if establishment occurs, risk is heightened due to the group behavior exhibited by both yaks and Bactrian camels, which form herds of up to 20 individuals (Xue et al., 2015; Liu et al., 2019), facilitating spread of infection throughout the entire groups.

Risk of interspecies contact and establishment is higher in regions where Bharal, Takin and Red Goral and Serrow ranges overlap. All species inhabit mountainous areas above 2000 meters with forested or grassy terrains (Chen et al, 2019)(Hua and Jinchu, 2001)(Abedin et al, 2024)(Mishra and Jonsingh, 1996). However transmission and establishment risk in populations is highest between Takin and Bharal specifically. As both display herd behaviour unlike gorals and serrows, forming groups of 6-20 individuals with both preferring alpine meadows. Transmission risk of PPRV increased by either direct contact of bodily secretions or aerosol droplets, or by inoculation with the virus from contaminated environments like shared food sources (Libeau, 2014).

Given these results. Various mitigation strategies might be implemented to reduce both zoonotic transmission risk and wildlife spillover risk. With main target areas including the Adjacent Himalayan-Sichuan-Yunnan Region and north of there due to higher species overlap and population density. These could include:

- Vaccinations are available for PPRV. Including live attenuated and thermostable vaccines. The live attenuated vaccine remains the gold standard for effectivity and provide life-long immunity but

require refrigeration. However, effective thermostable vaccines have been developed which can be shipped to resource-poor areas. Facilitating potentially large scale vaccination campaigns to bharal (Sen et al, 2010) (Mariner et al, 2017). Additionally DIVA vaccines could also be implemented potentially aid in serosurveillance as they would allow one to distinguish between animals that obtained immunity from vaccinations or natural immunity (Jia et al, 2020).

- Active serosurveillance of Bharals could effectively complement vaccination campaigns by identifying regions herds have had prior exposure to PPRV, thereby informing epidemiologists about high-risk areas for viral transmission. Coupled with ongoing serosurveillance of ruminant livestock, could provide a more comprehensive understanding of disease spread and help target control efforts to areas with the highest outbreak risk.

- Information Campaigns and Wildlife-Livestock Interface management would also provide a strong front in controlling the spread of PPRV but minimizing the risk of contact between wild and domestic populations, therefore reducing the risk of disease spillover, which has been observed before in PPRV affected livestock hosts.

Mitigation strategies such as these have successfully been implemented in China (Legnardi et al., 2022) and could serve as an effective approach to combat the threat of interspecies and zoonotic spillover from Bharal within its range.

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## Alignment Results:

See the viral sequence alignments here:

<https://drive.google.com/file/d/1B48rOa-ZMAoTmbdIafd5qFFdd6phwyDE/view?usp=sharing>

CLUSTAL O(1.2.4) multiple sequence alignment

Hendra	TTGGCGATATGAATCCATGGCTATTTTTCAGAAAGACTTGACGAAATTTATGGCTTACC60	
Nipah_Virus	TTGGAGATACGAATCAATGGCTATATTTGCTGAACGCTCGGATGAGATATACGGTTTACC	60
FelisCatus_Hongkong_FeMV	CTGGCGATATGAATCAAGTAGTATGTTTCAGAGAGACTTAATGAAATTTATGGACTGCC	
	60	
FelisCatus_Switzerland_FeMV	TTGGCGATATGAGTCAAGTAGTGTATTTTCAGAGAGACTCAATGAAATTTACGGATTGCC	
	60	
Porcine_morbillivirus_Swine_Mexico	TTGGCGTTATGAGACAATAAGCATCTATGCCCAGAGGTTAAATGAGATTTATGGACTCCC	
	60	
Dolphin	TTGGAGGTATGAGACAATCAGCATATTTGCCAGAGACTAAATGAGATTTATGGGTTGCC	60
Pilot_Whale_CEMV	TTGGAGGTATGAGACAATCAGCATATTTGCACAGAGATTAATGAGATCTATGGCTTGCC	60
Canine_CDV	TTGGCGTTATGAGACCATCAGTATTTTGTCTCAGAGATTAAATGAAATCTATGGTCTCCC	60
Ferret_Australia_CDV	TTGGCGTTATGAGACCATCAGTATTTTGTCTCAGAGATTAAATGAAATCTATGGTCTCCC	60
	Harbourseal_Netherlands_WaddenSeal_PDV	
	TTGGAGATACGAGACAATCAGCATATTCGCTCAAAGGTTAAATGAAATCTATGGGCTTCC60	

	GreySeal_Massachusetts_PhocineMorbillivirus	
	TTGGAGATACGAGACAATCAGCATATTGCTCAAAGGTTAAATGAAATCTATGGGCTTCC60	
Harp_Seal_Canada_PhocineMorbillivirus	TTGGAGATACGAGACAATCAGCATATTGCTCAAAGGTTAAATGAAATCTATGGGCTTCC	60
Siberian_Ibex_PPRV	TTGGAGATACGAGACAATCAGCATATTGACAGAGGCTGAATGAAATATATGGACTACC	60
Goitered_gazelle_PPRV_Mongolia	TTGGAGATACGAGACAATCAGCATATTGACAGAGGCTGAATGAAATATATGGACTACC	60
SaigaPPRV	TTGGAGATACGAGACAATCAGCATATTGACAGAGGCTGAATGAAATATATGGACTACC	60
Bharal_Tibet_PPRV	TTGGAGATACGAGACAATCAGCATATTGACAGAGGCTGAATGAAATATATGGACTACC	60
Ovis_aries_PPRV	TTGGAGATACGAGACAATCAGCATATTGACAGAGGCTGAATGAAATATATGGACTACC	60
nubian_ibex_PPRV	TTGGAGATACGAGACAATCAGCATATTGACAGAGGCTGAATGAAATATATGGACTACC	60
Measles_virus	TTGGAGATATGAGACCATCAGCTTATTGACAGAGGCTAAATGAGATTACGGATTACC	60
Cattle_Rinderpest	CTGGAGGTATGAGACAATCAGCTTATTGCTCAAAGGCTAAATGAGATATACGGGTTACC	60
Giraffe_Kenya_Rinderpest	TTGGAGGTACGAAACAATCAGCTTATTGCTCAAAGACTAAATGAGATATACGGGCTACC	60
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Nipah_Virus	TGGATTTTAAATTGGATGCACAAACGACTAGAAAAGATCTGTTATCTATGTTGCAGACCC	120
FelisCatus_Hongkong_FeMV	TGGATTTTCCAGTGGCTTCACAAGATTTGGAGAAATCTGTTCTATACGTTAGTGATCC	120
FelisCatus_Switzerland_FeMV	TGGATTTTTCAGTGGCTTCATAAGATTTTGAAAAATCTGTTTGTATGTCAGTGATCC	120
Porcine_morbillivirus_Swine_Mexico	TTCTTTCTTTGAATGGTTACATAAAAGGTTAGAGAAGTCTGTACTGTATGTCAGCGATCC	120
Dolphin	TTCATTCTTCCAGTGGCTACACAAGAGGTTGGAGAAATCAGTCCTATATGTAAGCGATCC	120
Pilot_Whale_CEMV	CTCATTTTCCAGTGGCTACATAAGAGATTAGAAAAATCGGTACTATATGTAAGTGACCC	120
Canine_CDV	CTCATTTTCCAATGGTTGCACAGAAGATTGGAACAGTCGATCTTATACGTAAGTGACCC	120
Ferret_Australia_CDV	CTCATTTTCCAATGGTTGCACAGAAGATTGGAACAGTCGATCTTATACGTAAGTGACCC	120
	Harbourseal_Netherlands_WaddenSeal_PDV	
	TTCATTTTTCCAATGGTTGCACAGGAGATTAGAACAAATCGACACTGTATGTGAGTGACCC	120
	GreySeal_Massachusetts_PhocineMorbillivirus	
	TTCATTTTTCCAATGGTTGCACAGAAGATTAGAACAAATCGACACTGTATGTGAGTGACCC	120
Harp_Seal_Canada_PhocineMorbillivirus	TTCATTTTTCCAATGGTTGCACAGAAGATTAGAACAAATCGACACTGTATGTGAGTGACCC	120
Siberian_Ibex_PPRV	ATCCTTCTTTCAATGGTTACACAGGATATTGGAAAAATCCGTACTCTACGTCAGTGACCC	120
Goitered_gazelle_PPRV_Mongolia	ATCCTTCTTTCAATGGTTACACAGGATATTGGAAAAATCCGTACTCTACGTCAGTGACCC	120
SaigaPPRV	ATCCTTCTTTCAATGGTTACACAGGATATTGGAAAAATCCGTACTCTACGTCAGTGACCC	120
Bharal_Tibet_PPRV	ATCCTTCTTTCAATGGTTACACAGGATATTGGAAAAATCCGTACTCTACGTCAGTGACCC	120
Ovis_aries_PPRV	ATCCTTCTTTCAATGGTTACACAGGATATTGGAAAAATCCGTACTCTACGTCAGTGACCC	120
nubian_ibex_PPRV	ATCCTTCTTTCAATGGTTACACAGGATATTGGAAAAATCCGTACTCTATGTCAGTGACCC	120
Measles_virus	CTCATTTTTCAGTGGCTGCATAAGAGGCTTGAACCTCTGTCCTCTATGTAAGTGACCC	120
Cattle_Rinderpest	ATCCTTCTTCCAGTGGTTACATAGGCGCCTTGAAGATCAGTATTGTATGTCAGTGACCC	120
Giraffe_Kenya_Rinderpest	ATCCTTCTTCCAGTGGTTACATAGGCGCTTGAAGAGCAGTATTGTATGTCAGTGACCC	120
	*****	
Hendra	TAATTGCCCCACCAGACATCGGGAAACATATAAACCTTGATGATACTCCTGAAGATGACAT	180
Nipah_Virus	TAATTGCCCCCTAATATTGACAAACATATGGAAC TAGAAAAAACTCCTGAAGATGATAT	180
FelisCatus_Hongkong_FeMV	ATCTAGTCCACCTGACTTTGATCAACATGTCGATATAGAATCAGTCCCAAATGACCATAT	180
FelisCatus_Switzerland_FeMV	ATCTAGCCCCGATTTTGTATCAACATATCGATATAGAATCGGTTCCAAATGACCCACAT	180
Porcine_morbillivirus_Swine_Mexico	TCATTGCCCCACCAGATCTCGACCACCATATCAACCTGGATGAGGTCCCAAATCAACAAAT	180
Dolphin	TCACTGTCCACCAGATCTTGATACTCATATGGATTAGATGCCGTCCCAAACCTCTCAAAT	180
Pilot_Whale_CEMV	CCACTGTCCACCGACCTTGATATACATCATATGATGCGGTTCCAAACCTCTCAGAT	180
Canine_CDV	CCACTGCCCTCCAGATCTCGATCGTCATGTGGACTTGAATACAGCCCCCTAACTCTCAAAT	180
Ferret_Australia_CDV	CCACTGCCCTCCAGATCTCGATCGTCATGTGGACTTGAATACAGCCCCCTAACTCTCAAAT	180
Harbourseal_Netherlands_WaddenSeal_PDV	TCACTGTCCCTCTGATCTTGATCGCCATATAAACCTTGATGCAACTCCAAATTCTCAGAT	180
GreySeal_Massachusetts_PhocineMorbillivirus	TCACTGTCCCTCTGATCTTGATCGCCATATAAACCTTGATGCAACTCCAAATTCTCAGAT	180
Harp_Seal_Canada_PhocineMorbillivirus	TCACTGTCCCTCTGATCTTGATCGCCATATAAACCTTGATGCAACTCCAAATTCTCAGAT	180
Siberian_Ibex_PPRV	ACATTGTCTCTCCGATCTAGATAATCATATCCCTCTGGACAGTGTCCCAATGCCCAAAT	180
Goitered_gazelle_PPRV_Mongolia	ACATTGTCTCTCCGATCTAGATAATCATATCCCTCTGGACAGTGTCCCAATGCCCAAAT	180
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Ovis_aries_PPRV	ACATTGCCCTCCGACCTAGATAATCATATCCCTCTGGACAGTGTCCCTAATGCCCAAAT	180
nubian_ibex_PPRV	ACATTGCCCTCCGACCTAGATAATCATATCCCTCTGGACAGTGTCCCTAATGCCCAAAT	180
Measles_virus	TCATTGCCCCCGACCTTGACGCCCATGTCCCGTTATGCAAAGTCCCAATGACCAAAT	180
Cattle_Rinderpest	TCATTGTCCCCCGATTAGATAGCCACGTCGAACCTGGATAATGTCCGAATGATCAGAT	180
Giraffe_Kenya_Rinderpest	TCATTGTCCACCCGATTAGACAAACCACGGGCACITGAATAATGTCCCAAATGATCAGAT	180
	*****	
Hendra	ATTTATCCATTACCAAAAAGGCGGGATTGAAGGTTATAGTCAGAAGACTTGGACGATCGC	240
Nipah_Virus	ATTCATTCAATTATCCTAAAGGCGGTATTGAAGGATATAGCCAAAAAACATGGACTATAGC	240
FelisCatus_Hongkong_FeMV	CTTTATCAAGTACCCGATGGGTGGAATAGAGGGGTTCTGTCAAAAATTATGGACCATTAG	240
FelisCatus_Switzerland_FeMV	CTTTATTAAGTATCCGATGGGTGGAATAGAGGGGTTCTGTCAAAAGTTATGGACTATTAG	240

Porcine\_morbillivirus\_Swine\_Mexico CTTTATCAAATACCCGATGGGTGGAATTGAGGGGTATTGCCAAAAGTTATGGACCATAAG 240  
 Dolphin ATTTATAAAGTACCCAATGGGAGGGATCGAAGGATACTGTCAGAAGCTCTGGACAATAAG 240  
 Pilot\_Whale\_CEMV ATTTATAAAGTACCCAATGGGGGGAATCGAAGGGTACTGTCAGAAACTCTGGACGATAAG 240  
 Canine\_CDV ATTCATCAAATACCCAATGGGAGGGGTGGAGGGGTATTGTCAGAAGTTATGGACTATTAG 240  
 Ferret\_Australia\_CDV ATTCATCAAATACCCAATGGGAGGGGTGGAGGGGTATTGTCAGAAGTTATGGACTATTAG 240  
 Harbourseal\_Netherlands\_WaddenSeal\_PDV ATTCATAAAATATCCAATGGGAGGAGTCTGAAGGGTATTGCCAAAAATTATGGACAATTAG240  
 GreySeal\_Massachusetts\_PhocineMorbillivirus ATTCATAAAATATCCAATGGGAGGAGTCTGAAGGGTATTGCCAAAAATTATGGACAATTAG240  
 Harp\_Seal\_Canada\_PhocineMorbillivirus ATTCATAAAATATCCAATGGGAGGAGTCTGAAGGGTATTGCCAAAAATTATGGACAATTAG 240  
 Siberian\_Ibex\_PPRV ATTCATCAAGTACCCAATGGGCGGAATAGAAGGTTATTGCCAAAAACTATGGACAATCAG 240  
 Goitered\_gazelle\_PPRV\_Mongolia ATTCATCAAGTACCCAATGGGCGGAATAGAAGGTTATTGCCAAAAACTATGGACAATCAG 240  
 SaigaPPRV ATTCATCAAGTACCCAATGGGCGGAATAGAAGGTTATTGCCAAAAACTATGGACAATCAG 240  
 Bharal\_Tibet\_PPRV ATTCATTAAGTACCCAATGGGCGGAATAGAAGGTTATTGCCAAAAACTATGGACAATCAG 240  
 Ovis\_aries\_PPRV ATTCATTAAGTACCCCATGGGCGGAATAGAAGGTTATTGCCAAAAACTATGGACAATCAG 240  
 nubian\_ibex\_PPRV ATTCATAAAGTACCCAATGGGCGGAATAGAAGGTTATTGCCAAAAACTATGGACAATCAG 240  
 Measles\_virus CTTCATCAAGTACCCTATGGGAGGTATAGAAGGGTATTGTCAGAAGCTGTGGACCATCAG 240  
 Cattle\_Rinderpest TTTCATCAAATACCCTATGGGGGGGATAGAAGGCTATTGTCAAAAACCTGTGGACAATTAG 240  
 Giraffe\_Kenya\_Rinderpest CTTCATTAAATACCCTATGGGGGGGATAGAAGGCTATTGTCAAAAACCTATGGACAATTAG 240  
 \* \* \* \* \*  
 Hendra AACAAATCCCTTTCTGTTTCTCAGTGCCTACGAAACAAATACAAGGATTGCAGCTATAGT 300  
 Nipah\_Virus AACTATCCCCCTTTTATTCTTGAGTGCCTATGAGACAAACACGAGGATTGCTGCAATTGT 300  
 FelisCatus\_Hongkong\_FeMV TACAATCCGTTCTTATATTTAGCAGCTTTTGATACAGGGGTTAGAATCTCATCATTGGT 300  
 FelisCatus\_Switzerland\_FeMV TACAATCCCATCTTTACTTATGTCAGCTTTTGATACAGGGCTTAGAATAGCATCACTGGT 300  
 Porcine\_morbillivirus\_Swine\_Mexico CACTATCCCCTATCTTTACTTGTCTAGCTCATGAATGCGGAGTGAGAATAGCTTCTTTAGT 300  
 Dolphin TACAATACCCTACCTGTACCTAGCGGCTCATGAGAGTGGAGTTAGGATTGCCTCATTTGGT 300  
 Pilot\_Whale\_CEMV CACGATACCGTACCTTTACCTAGCAGCTCATGAGAGTGGAGTTAGGATTGCTTCATTAGT 300  
 Canine\_CDV CACCATACCTTATCTGTACTTGGCGGCACATGAGAGTGGTGTGAGAATTGCATCACTTGT 300  
 Ferret\_Australia\_CDV CACCATACCTTATCTGTACTTGGCGGCACATGAGAGTGGTGTGAGAATTGCATCACTTGT 300  
 Harbourseal\_Netherlands\_WaddenSeal\_PDV CACTATACCATACCTGTACTTAGCGGCACATGAAAGCGGTGTTAGAAATTGCATCACTGGT 300  
 GreySeal\_Massachusetts\_PhocineMorbillivirus CACTATACCATACCTGTACTTAGCAGCACATGAAAGCGGTGTTAGAAATTGCATCACTGGT 300  
 Harp\_Seal\_Canada\_PhocineMorbillivirus CACTATACCATACCTGTACTTAGCAGCACATGAAAGCGGTGTTAGAAATTGCATCACTGGT 300  
 Siberian\_Ibex\_PPRV CACTATACCATACTTGTATCTGGCAGCCTATGAGAGCGGAGTAAGAATCGCCTCACTGGT 300  
 Goitered\_gazelle\_PPRV\_Mongolia CACTATACCATACTTGTATCTGGCAGCCTATGAGAGCGGAGTAAGAATCGCCTCACTGGT 300  
 SaigaPPRV CACTATACCATACTTGTATCTGGCAGCCTATGAGAGCGGAGTAAGAATCGCCTCACTGGT 300  
 Bharal\_Tibet\_PPRV TACTATACCATACTTGTATCTGGCAGCCTATGAGAGCGGAGTAAGAATCGCCTCACTGGT 300  
 Ovis\_aries\_PPRV TACTATACCATACTTGTATCTGGCAGCCTATGAGAGCGGAGTAAGAATCGCCTCACTAGT 300  
 nubian\_ibex\_PPRV TACCATACCGTACTTGTATCTGGCAGCCTATGAGAGCGGAGTAAGAATCGCCTCTCTAGT 300  
 Measles\_virus CACCATTCCCTACTTATACCTGGCTGCTTATGAGAGCGGGGTAAAGGATTGCTTCTGTTAGT 300  
 Cattle\_Rinderpest CACTATCCCCTATCTTTACTTGGCTGACATGAGAGCGGGGTCAAGGATTGCTCTCTTGT 300  
 Giraffe\_Kenya\_Rinderpest TACTATTCTTATCTTTACTTAGCTGCACATGAGAGCGGGGTGAGGATTGCTTCTCTTGT 300  
 \* \* \* \* \*  
 Hendra TCAGGGAGACAATGAGTCAATTGCCATAACTCAGAAGGTCCACCCTAATTTACCTTACAA 360  
 Nipah\_Virus CCAAGGAGACAATGAATCAATTGCTATCACTCAAAAAGTTTCATCCTAATCTTCCCTACAA 360  
 FelisCatus\_Hongkong\_FeMV TCAAGGCGATAACCAGGCAATTGCAGTAACCAAAAGAGTTCCTGCATCTTGGAGTTACTC 360  
 FelisCatus\_Switzerland\_FeMV TCAGGGCGATAATCAGGCGATTGCAGTGACAAAAAGAGTTCCGTCATCTTGGAGTTACTC 360  
 Porcine\_morbillivirus\_Swine\_Mexico TCAGGGAGACAACCAGACTATAGCTGTTACCAAGCGAGTTCAGATTATGGCCATACCA 360  
 Dolphin TCAAGGAGACAACCAGACCATAGCCGTCACAAAAAGAGTCCCAAGCACCTGGCCCTATGA 360  
 Pilot\_Whale\_CEMV TCAAGGAGATAATCAGACCATAGCCGTTACAAAAAGAGTCCCAAGTACCTGGCCATATGA 360  
 Canine\_CDV CCAAGGTGATAACCAAACTATTGCTGTCACTAAAAGAGTACCAAGCACCTGGTCTATGC 360  
 Ferret\_Australia\_CDV CCAAGGTGATAACCAAACTATTGCTGTCACTAAAAGAGTACCAAGCACCTGGTCTATGC 360  
 Harbourseal\_Netherlands\_WaddenSeal\_PDV TCAAGGAGACAACCAGACTATAGCAGTTACAAAAAGAGTCCCAAGCACATGGCCTTATGA 360  
 GreySeal\_Massachusetts\_PhocineMorbillivirus TCAAGGAGACAACCAGACTATAGCAGTTACAAAAAGAGTCCCAAGCACATGGCCTTATGA 360  
 Harp\_Seal\_Canada\_PhocineMorbillivirus TCAAGGAGACAACCAGACTATAGCAGTTACAAAAAGAGTCCCAAGCACATGGCCTTATGA 360  
 Siberian\_Ibex\_PPRV GCAGGGTGACAATCAGACAATCGCAGTGACAAAAAGAGTTCCAAGTTCTTGGCCTTATTC 360  
 Goitered\_gazelle\_PPRV\_Mongolia GCAGGGTGACAATCAGACAATCGCAGTGACAAAAAGAGTTCCAAGTTCTTGGCCTTATTC 360  
 SaigaPPRV GCAGGGTGACAATCAGACAATCGCAGTGACAAAAAGAGTTCCAAGTTCTTGGCCTTATTC 360  
 Bharal\_Tibet\_PPRV GCAGGGTGACAATCAGACAATCGCAGTGACAAAAAGAGTTCCAAGTTCTTGGCCTTATTC 360  
 Ovis\_aries\_PPRV GCAGGGTGACAATCAGACAATCGCAGTGACAAAAAGAGTTCCAAGTTCTTGGCCTTATTC 360  
 nubian\_ibex\_PPRV GCAAGGGGACAATCAGACCATAGCCGTAACAAAAAGGTTACCCAGCACATGGCCTTACAA 360  
 Measles\_virus CCAGGGGAGACAATCAGACAATTGCAGTACCAAGCGGGTCCCAAGTTCATGGCCTTACCA 360



Giraffe\_Kenya\_Rinderpest CCAGGGAGACAATCAGACAATTGCAGTTACCAAGCGGGTGCCAAGTTCATGGCCTTACCA 360  
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Hendra AGTCAAGAAAGAAATTTGTGCAAGGCAAGCTCAATTATATTTTGACAGGCTCAGAATGAA 420  
 Nipah\_Virus GGTAAAGAAAGAGATCTGTGCAAGCAAGCTCAGCTTTATTTGAAAGGTTAAGGATGAA 420  
 FelisCatus\_Hongkong\_FeMV AAAGAAAAAGGAAGAATCACTAAAATAACAACACAATATTTCTTAATTTAAGACAACG 420  
 FelisCatus\_Switzerland\_FeMV GAAGAAAAAGGAAGAATCACTAAAATAACAACACAGTATTTCTTAACTTGAGGCAACG 420  
 Porcine\_morbillivirus\_Swine\_Mexico CCTTAAGAAGGCAGAAGCTAGAGTCACAATTAATTATTTTCATGATTTTACGGGAAAG 420  
 Dolphin TCTCAAGAAGAGGGAGGCTACAAAAATAACTATTGAGTACTTCTTAATCCTAAGGCAGCG 420  
 Pilot\_Whale\_CEMV TCTCAAGAAAAGGGAAGCTACAAAGATAACTATTGAGTACTTCTTAATCCTGAGGCAGCG 420  
 Canine\_CDV CTTGAAGAAATCTGAAGCCAGTCGAGTGACCACAGAATACTTTATAGCCTTGAGACAGAG 420  
 Ferret\_Australia\_CDV CTTGAAGAAATCTGAAGCCAGTCGAGTGACCACAGAATACTTTATAGCCTTGAGACAGAG 420  
 Harbourseal\_Netherlands\_WaddenSeal\_PDV ACTGAAAAAAGCTGAAGCTAGCCGAGTGACAACAGAGTATTTTATAGCTTTAAGGCAGAG 420  
 GreySeal\_Massachusetts\_PhocineMorbillivirus ACTGAAAAAAGCTGAAGCTAGCCGAGTGACAACAGAGTATTTTATAGCTTTAAGGCAGAG 420  
 Harp\_Seal\_Canada\_PhocineMorbillivirus ACTGAAAAAAGCTGAAGCTAGCCGAGTGACAACAGAGTATTTTATAGCTTTAAGGCAGAG 420  
 Siberian\_Ibex\_PPRV ACTAAAAAGAGGGAGGCCTCCAAGGCCGCTCAAAATTACTTCGTAGTCTTAAAGGCAAAG 420  
 Goitered\_gazelle\_PPRV\_Mongolia ACTAAAAAGAGGGAGGCCTCCAAGGCCGCTCAAAATTACTTCGTAGTCTTAAAGGCAAAG 420  
 SaigaPPRV ACTAAAAAGAGGGAGGCCTCCAAGGCCGCTCAAAATTACTTCGTAGTCTTAAAGGCAAAG 420  
 Bharal\_Tibet\_PPRV ACTAAAAAGAGGGAGGCATCCAGAGCCGCTCAAAACTACTTCGTGGTCTTAAAGGCAAAG 420  
 Ovis\_aries\_PPRV ACTAAAAAGAGGGAGGCATCCAAAGCCGCTCAAAATTACTTCGTAGTCTTAAAGGCAAAG 420  
 nubian\_ibex\_PPRV ACTAAAAAGAGAGAGGCATCCAAAGCCGCTCAAAATTACTTCGTAGTCTTAAAGGCAAAG 420  
 Measles\_virus CCTTAAGAAACGGGAAGCTGCTAGAGTAAGTACAGATTACTTTGTAATCTTAGGCAAAG 420  
 Cattle\_Rinderpest CCTTAAGAAAGAGAAGCTGCACGCGTGACAAGAGAATATTTCTGTCTCCTGAGGCAAAG 420  
 Giraffe\_Kenya\_Rinderpest CCTTAAGAAAGAGAAGCTGCTCGGTGACAAGGGAATATTTCTGTCTCCTGAGGCAAAG 420  
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Hendra TCTTAGGGCTTAGGACTCAACTTAAAGCAACAGAGACCATTATAAGTACACACTTATT 480  
 Nipah\_Virus CTTAAGAGCCCTCGGCCACAATCTTAAAGCTACAGAACTATCATCAGTACACATCTTTT 480  
 FelisCatus\_Hongkong\_FeMV CTTACACGATATAGGTATGAATTGAAAGCAAATGAGACTATTATATCCTCTCATTTCTT 480  
 FelisCatus\_Switzerland\_FeMV TCTACATGATATAGGTATGAATTGAAAGCAAATGAAACTATCATATCCTCTCATTTT 480  
 Porcine\_morbillivirus\_Swine\_Mexico ACTTCATGATATAGGTACCAATTTAAAGCTAATGAAACCATAATTTTCATCCCATTTTT 480  
 Dolphin ATTGCACGATATAGGGCATCTTTGAAAGCAAATGAAACAATTATATCCTCACATTTCTT 480  
 Pilot\_Whale\_CEMV ATTGCATGATATAGGACATCATTTGAAAGCAAATGAAACAATTATATCCTCGCACTTCTT 480  
 Canine\_CDV GTTACATGATGTCGGACATCATTTGAAAGCAAATGAAACAATAATCTCTTCCCACTTTTT 480  
 Ferret\_Australia\_CDV GTTACATGATGTCGGACATCATTTGAAAGCAAATGAAACAATAATCTCTTCCCACTTTTT 480  
 Harbourseal\_Netherlands\_WaddenSeal\_PDV ATTGCATGATGTTGGTCACCATTTGAAAGCAAACGAAACAATAGTGCTTTCACACTTCTT 480  
 GreySeal\_Massachusetts\_PhocineMorbillivirus ATTACATGATGTTGGTCACCATTTGAAAGCAAACGAAACAATAGTGCTTTCACACTTCTT 480  
 Harp\_Seal\_Canada\_PhocineMorbillivirus ATTACATGATGTTGGTCACCATTTGAAAGCAAACGAAACAATAGTGCTTTCACACTTCTT 480  
 Siberian\_Ibex\_PPRV ATTGCACGATGTAGGTATCACTTAAAGGCTAATGAGACCATAGTATCTTCTCACTTTTT 480  
 Goitered\_gazelle\_PPRV\_Mongolia ATTGCACGATGTAGGTATCACTTAAAGGCTAATGAGACCATAGTATCTTCTCACTTTTT 480  
 SaigaPPRV ATTGCACGATGTAGGTATCACTTAAAGGCTAATGAGACCATAGTATCTTCTCACTTTTT 480  
 Bharal\_Tibet\_PPRV ATTGCACGATGTAGGTATCACTTAAAGGCTAATGAAACCATAGTATCTTCTCACTTTTT 480  
 Ovis\_aries\_PPRV ATTGCACGATGTAGGTATCACTTAAAGGCTAATGAAACCATAGTATCTTCTCACTTTTT 480  
 nubian\_ibex\_PPRV ATTGCACGATGTAGGTATCACTTAAAGGCTAATGAAACCATAGTATCTTCTCACTTTTT 480  
 Measles\_virus GCTACATGACATTGGCCATCACCTCAAGGCAAATGAGACAATTGTTTCATCACATTTTTT 480  
 Cattle\_Rinderpest ACTCCATGATATTGGCCATCACCTTAAAGGCAAACGAAACTATCGTGTCTATCACACTTCTT 480  
 Giraffe\_Kenya\_Rinderpest ACTCCATGATATTGGCCATCACCTTAAAGGCAAACGAAACTATTGTGTCTATCACACTTCTT 480  
 \* \* \*\*\*\* \* \*\*\*\* \* \*\*\*\* \*

Hendra TGTCTACTCTAAGAAAATACATTATGATGGTGCAGTATTATCACAAGCCCTCAAATCAAT 540  
 Nipah\_Virus TATTTATTGGAAGAAATTCATTATGATGGTGTCTGTCTCAGGCACTCAAATCAAT 540  
 FelisCatus\_Hongkong\_FeMV TGTTTACTCTAAAGGTATTTATGATGGAATACCTTCTCTCCAGGCACTTAAAGAT 540  
 FelisCatus\_Switzerland\_FeMV TGTATACTCTAAAGGTATTTATACGATGGAATACCTTCTTCTCAGGCACTTAAAGAT 540  
 Porcine\_morbillivirus\_Swine\_Mexico TGTATATTCAAAGGGATTTACTACGATGGCATGCTAATCTCACAGTCCCTTAAAGCGT 540  
 Dolphin TGTTTACTCAAAGGTATATATTATGATGGAATGCTGATCTCTCAATCACTTAAAGGT 540  
 Pilot\_Whale\_CEMV TGTTTATTCAAAGGTATATATGATGAGGGATGCTGATCTCTCAGTCACTCAAGAGTGT 540  
 Canine\_CDV TGTATACTCAAAGGAATCTATTATGATGGAATGTTAATTTACAATCCCTGAAGAGTAT 540  
 Ferret\_Australia\_CDV TGTATACTCAAAGGAATCTATTATGATGGAATGTTAATTTACAATCCCTGAAGAGTAT 540  
 Harbourseal\_Netherlands\_WaddenSeal\_PDV TGTTTACTCAAAGGAATCTATTACGACGGGATGTTAATTTCTCAATCCCTCAAGAGTGT 540  
 GreySeal\_Massachusetts\_PhocineMorbillivirus TGTTTACTCAAAGGAATCTATTACGACGGGATGTTAATTTCTCAATCCCTCAAGAGTGT 540  
 Harp\_Seal\_Canada\_PhocineMorbillivirus TGTTTACTCAAAGGAATCTATTACGACGGGATGTTAATTTCTCAATCCCTCAAGAGTGT 540

Siberian_Ibex_PPRV	TGTATATTCCAAAGGGATTATTATGACGGCCTGCTAGTCTCACAATCACTAAAGAGCAT	540
Goitered_gazelle_PPRV_Mongolia	TGTATATTCCAAAGGGATTATTATGACGGCCTGCTAGTCTCACAATCACTAAAGAGCAT	540
SaigaPPRV	TGTATATTCCAAAGGGATTATTATGACGGCCTGCTAGTCTCACAATCACTAAAGAGCAT	540
Bharal_Tibet_PPRV	TGTATATTCCAAAGGGATTATTATGACGGCCTGCTAGTCTCACAATCACTAAAGAGCAT	540
Ovis_aries_PPRV	TGTATATTCCAAAGGGATTATTATGACGGCCTGCTAGTCTCACAATCACTAAAGAGCAT	540
nubian_ibex_PPRV	TGTATATTCCAAAGGGATTATTATGACGGCCTGCTAGTCTCACAATCACTAAAGAGCAT	540
Measles_virus	TGTCTATTCCAAAGGAATATATTATGATGGGCTACTTGTGTCCCAATCACTCAAGAGCAT	540
Cattle_Rinderpest	TGTTTACTCCAAGGGGATATATTACGACGGACTACTAATCTCACAGTCTCTCAAAGCAT	540
Giraffe_Kenya_Rinderpest	TGTCTACTCCAAGGGGATCTATTATGACGGACTACTAATCTCACAGTCTCTTAAAAGCAT	540
	* * * * *	
Hendra	GTCTAGGTGTTGTTTTGGTCAGAGACATTGGTGGACGAGACAAGATCTGCTTGCAGCAA	600
Nipah_Virus	GTCAAGATGTTGCTTTTGGTCAGAGACTCTGGTGGATGAAACTAGATCAGCTTGTAGTAA	600
FelisCatus_Hongkong_FeMV	TGCAAGATGTGTCTTTTGGTCTGAAACGATTGTTGATGAGACTAGGTTCAGCTTGCAGTAA	600
FelisCatus_Switzerland_FeMV	GGCAAGATGTGTCTTTTGGTCTGAAACAATTGTTGATGAGACTAGATCAGCTTGCAGTAA	600
Porcine_morbillivirus_Swine_Mexico	AGCCCGATGTGTTTTCTGGTCAGAACTATTGTAGATGAGACTAGAGCAGCTTGTAGCAA	600
Dolphin	GGCTCGGTGTGTTTTCTGGTCGGAACAATTGTGGATGAAACTAGAGCAGCTTGCAGTAA	600
Pilot_Whale_CEMV	AGCCCGGTGTGTTTTTGGTCCGAGACAATTGTGGATGAAACCAGAGCAGCCTGCAGCAA	600
Canine_CDV	AGCTAGGTGTGTATTTTGGTCAGAAACAATAGTGGATGAGACCCGAGCCGCGTGCAGCAA	600
Ferret_Australia_CDV	AGCTAGGTGTGTATTTTGGTCAGAAACAATAGTGGATGAGACCCGAGCCGCGTGCAGCAA	600
	Harbourseal_Netherlands_WaddenSeal_PDV	
	AGCTAGATGTGTGTTTTGGTCAGAAACAATAGTAGATGAGACACGAGCTGCATGTAGCAA	600
	GreySeal_Massachusetts_PhocineMorbillivirus	
	AGCTAGATGTGTGTTTTGGTCAGAAACAATAGTAGATGAGACACGAGCTGCATGTAGCAA	600
Harp_Seal_Canada_PhocineMorbillivirus	AGCTAGATGTGTGTTTTGGTCAGAAACAATAGTAGATGAGACACGAGCTGCATGTAGCAA	600
Siberian_Ibex_PPRV	CGCCAGATGTGTCTTCTGGTCCGAGACTATAGTGGATGAAACCAGAGCGGCGTGCAGTAA	600
Goitered_gazelle_PPRV_Mongolia	CGCCAGATGTGTCTTCTGGTCCGAGACTATAGTGGATGAAACCAGAGCGGCGTGCAGTAA	600
SaigaPPRV	CGCCAGATGTGTCTTCTGGTCCGAGACTATAGTGGATGAAACCAGAGCGGCGTGCAGTAA	600
Bharal_Tibet_PPRV	CGCCAGATGTGTCTTCTGGTCCGAGACTATAGTGGATGAAACCAGAGCGGCGTGCAGTAA	600
Ovis_aries_PPRV	CGCCAGATGTGTCTTCTGGTCCGAGACTATAGTGGATGAAACCAGAGCGGCGTGCAGCAA	600
nubian_ibex_PPRV	CGCTAGATGTGTCTTCTGGTCCGAGACTATAGTGGATGAAACCAGAGCGGCGTGCAGCAA	600
Measles_virus	CGCAAGATGTGTATTCTGGTCAGAGACTATAGTTGATGAAACAAGGGCAGCATGCAGTAA	600
Cattle_Rinderpest	TGCACGATGTGTCTTCTGGTCAGAAACTATAGTTGATGAGACAAGAGCAGCTTGCAGCAA	600
Giraffe_Kenya_Rinderpest	TGCTCGATGTGTCTTCTGGTCAGAGACTATAGTTGATGAGACAAGAGCAGCCTGTAGCAA	600
	* * * * *	
Hendra	TATTAGTACTACCATAGCTAAGGCGATTGAGAATGGATTATCAAGAAATGTGGGTTACTG	660
Nipah_Virus	CATCAGCACTACAATAGCTAAAGCTATAGAAAATGGGTTGTCAAGAAATGTCGGCTATTG	660
FelisCatus_Hongkong_FeMV	TATATCTACGACACTCGCAAAGGCAATTGAAAGGGGTTATGATAAATTTGTGGCGTACGC	660
FelisCatus_Switzerland_FeMV	TATATCCACCACACTTGCAAAGGCAATTGAAAGGGGTTATGATAAATTTGTGGCGTATGC	660
Porcine_morbillivirus_Swine_Mexico	CATATCCACAACCCTGGCTAAATCAATTGAAAAAGGATTTGATAGATATCTAGCCTATGC	660
Dolphin	TATCTCGACAACTCTTGCAAAAAGCATAGAAAGGGGATTGACCGGTATTTGGCTTACTC	660
Pilot_Whale_CEMV	TATCTCAACAACCTCTTGCAAAAGAGCATAGAAAGGGGATTGACCGGTATTTAGCTTACTC	660
Canine_CDV	CATTTCACAACATTGCGAAAGCCATTGAGAAAGGGTTTGACCGATATTTAGCCTACAC	660
Ferret_Australia_CDV	CATTTCACAACATTGCGAAAGCCATTGAGAAAGGGTTTGACCGATATTTAGCCTACAC	660
	Harbourseal_Netherlands_WaddenSeal_PDV	
	TATCTCTACAACCTCTAGCAAAGGCAATTGAGAAGGGTTTGATAGGTACCTAGCCTACGC	660
	GreySeal_Massachusetts_PhocineMorbillivirus	
	TATCTCTACAACCTCTAGCAAAGGCAATTGAGAAGGGTTTGATAGATACCTAGCCTACGC	660
Harp_Seal_Canada_PhocineMorbillivirus	TATCTCTACAACCTCTAGCAAAGGCAATTGAGAAGGGTTTTGATAGATACCTAGCCTACGC	660
Siberian_Ibex_PPRV	TATTGCAACAACCTGTCGCTAAGAGTATAGAGAGGGGTTATGATAGGTACCTTGCATATTC	660
Goitered_gazelle_PPRV_Mongolia	TATTGCAACAACCTGTCGCTAAGAGTATAGAGAGGGGTTATGATAGGTACCTTGCATATTC	660
SaigaPPRV	TATTGCAACAACCTGTCGCTAAGAGTATAGAGAGGGGTTATGATAGGTACCTTGCATATTC	660
Bharal_Tibet_PPRV	TATTGCAACAACCTGTCGCTAAGAGTATAGAGAGGGGTTATGATAGGTACCTTGCATATTC	660
Ovis_aries_PPRV	TATTGCAACAACCTGTCGCTAAGAGTATAGAGAGGGGTTATGATAGGTACCTTGCATATTC	660
nubian_ibex_PPRV	TATTGCAACAACCTGTCGCTAAGAGTATAGAGAGGGGTTATGATAGGTACCTTGCATATTC	660
Measles_virus	TATTGCTACAACAATGGCTAAAAGCATCGAGAGAGGGTTATGACCGTTATCTTGCATATTC	660
Cattle_Rinderpest	CATCGCCACGACTATAGCCAAGAGCATAGAGAGAGGGTTTGACAGGTACCTTGCTTATTC	660
Giraffe_Kenya_Rinderpest	CATTGCCACAACCATAGCCAAGAGCATAGAGAGGGGATTGACAGGTACCTCGCTTATTC	660
	* * * * *	
Hendra	CATCAACGTCTTGAAGGTCATACAGCAACTGCTTATTTCTACTGAGTTTAGCATCAACGA	720
Nipah_Virus	CATCAATATTTTGAAGTAATTCAGCAGCTTCTCATATCAACTGAGTTTAGTATTAACGA	720
FelisCatus_Hongkong_FeMV	TATCAATATTTTATAAAAACAATACATCAAGTTTGTATTGCATTGTCTTTACGATTAATCC	720
FelisCatus_Switzerland_FeMV	TATCAATATTTTATAAAAACAATACATCAAGTTTGTATTGCATTGTCTTTACGATCAACCC	720
Porcine_morbillivirus_Swine_Mexico	CCTTAACCTTATCAAAACCATACAGCAGCTGTTGATTCTACTGGGCTTTACCATCAATGG	720
Dolphin	ATTGAATGTACTCAAGATTATTCAACAGATCCTTATCTCCCTAGGGTTTACAATAAACAC	720

Pilot_Whale_CEMV	GCTGAATATACTCAAGATCATTTCAGCAGATCCTCATCTCCCTAGGGTTTACAATAAACAC	720
Canine_CDV	GCTGAACATTTTAAAAATCATCCAACAAGTATTAATTTTCATTAGGATTCACTATCAATTC	720
Ferret_Australia_CDV	GCTGAACATTTTAAAAATCATCCAACAAGTATTAATTTTCATTAGGATTCACTATCAATTC	720
Harbourseal_Netherlands_WaddenSeal_PDV	ACTTAATATCTTGAAGATCATTCAACAAGTTCTCATCTCATTAGGATTCACTATTAATTC	720
GreySeal_Massachusetts_PhocineMorbillivirus	ACTTAATATCTTGAAGATCATTCAACAAGTTCTCATCTCATTAGGATTCACTATTAATTC	720
Harp_Seal_Canada_PhocineMorbillivirus	ACTTAATATCTTGAAGATCATTCAACAAGTTCTCATCTCATTAGGATTCACTATTAATTC	720
Siberian_Ibex_PPRV	TTTGAATATCCTCAAGATTTTCCAACAGATCCTTATATCCCTTAACTTCACTATTAACAC	720
Goitered_gazelle_PPRV_Mongolia	TTTGAATATCCTCAAGATTTTCCAACAGATCCTTATATCCCTTAACTTCACTATTAACAC	720
SaigaPPRV	TTTGAATATCCTCAAGATTTTCCAACAGATCCTTATATCCCTTAACTTCACTATTAACAC	720
Bharal_Tibet_PPRV	TTTGAATATCCTCAAGATTTTCCAACAGATCCTTATATCCCTTAACTTCACTATTAACAC	720
Ovis_aries_PPRV	TTTGAATATCCTCAAGATTTTCCAACAGATCCTTATATCCCTTAACTTCACTATTAACAC	720
nubian_ibex_PPRV	TCTAAATATCCTCAAAATTTTCCAACAGATCCTTATATCCCTTAACTTCACTATTAACAC	720
Measles_virus	CCTGAACGTCCTAAAAGTGATACAGCAAATTTTGATCTCTCTTGGCTTCACAATCAATTC	720
Cattle_Rinderpest	TCTGAACATCCTGAAAGTTATACAACAGATACTAATATCACTGGGTTTCACAATAAATTC	720
Giraffe_Kenya_Rinderpest	CCTGAACATCCTGAAAGTTATACAACAGATACTAATATCACTGGGTTTCACGATAAATTC	720
	* * * * *	
Hendra	GACATTGACTGCTGATGTAACATCTCCAATATCCAATAATCTCGATTGGCTGGTAACTGC	780
Nipah_Virus	GACATTGACACTGGATGTGACATCTCCCATTTCAAATAATTTAGATTGGCTTATAACAGC	780
FelisCatus_Hongkong_FeMV	TACTATGACACCAGACATCTACAGAACCCTTTCTACAAGAGTTTAGATCTACTTAAGAATCT	780
FelisCatus_Switzerland_FeMV	TACTATGACACCAGATATCACAGAACCCTTTCTATAAGAGCTTAGATCTACTTAAAAATCT	780
Porcine_morbillivirus_Swine_Mexico	ATCCATGACAGACGATGTGGTTGAACCCCTTTTAAAAAGATCATAGAATTATAACAAAGAT	780
Dolphin	TTCTATGACTCAAGACATAGCAATCCCATTACTGCAGAATCAAGATTTGTTGATTAAGAT	780
Pilot_Whale_CEMV	TTCTATGACTCAAGACATAGCAGTCCCATTACTACAAGATCAAGACTTGTTAATTAAGAT	780
Canine_CDV	AGCGATGACACGGGATGTGATAGAACCCCTCTTACAAGATCACTGTCTCTTGACCAAGAT	780
Ferret_Australia_CDV	AGCGATGACACGGGATGTGATAGAACCCCTCTTACAAGATCACTGTCTCTTGACCAAGAT	780
Harbourseal_Netherlands_WaddenSeal_PDV	GGCTATGACACAGGATGTAATAGAACCCTGCTGCAAAACCACTGTCTCTTGACTAAAAAT	780
GreySeal_Massachusetts_PhocineMorbillivirus	GGCTATGACACAGGATGTAATAGAACCCTGCTGCAAAACCACTGTCTCTTGACTAAAAAT	780
Harp_Seal_Canada_PhocineMorbillivirus	GGCTATGACACAGGATGTAATAGAACCCTGCTGCAAAACCACTGTCTCTTGACTAAAAAT	780
Siberian_Ibex_PPRV	AACAATGACTCAGGATGTCGTGGCACCGATCATCGAGAACGGTGATTTGCTGATAAGGAT	780
Goitered_gazelle_PPRV_Mongolia	AACAATGACTCAGGATGTCGTGGCACCGATCATCGAGAACGGTGATTTGCTGATAAGGAT	780
SaigaPPRV	AACAATGACTCAGGATGTCGTGGCACCGATCATCGAGAACGGTGATTTGCTGATAAGGAT	780
Bharal_Tibet_PPRV	AACAATGACTCAGGATGTCGTGGCACCGATCATCGAGAACGGTGATTTGCTGATAAGGAT	780
Ovis_aries_PPRV	AACAATGACTCAGGATGTCGTGGCACCGATCATCGAAAACGGGGATTTGCTGATAAGGAT	780
nubian_ibex_PPRV	AACAATGACTCAGGATGTCGTGGCACCGATCATCGAAAACGGGGATTTGCTGATAAGGAT	780
Measles_virus	AACCATGACCCGAGATGTAGTCATACCCCTCCTCACAACAACGATCTCTTAATAAGGAT	780
Cattle_Rinderpest	TACAATGACACAAGATGTAGTGGTCCCTCTTCTATCAAACCATGACCTCCTGATAAGGAT	780
Giraffe_Kenya_Rinderpest	TACAATGACACAAGATGTAGTGGTCCCTCTTCTATCAAACAATGACCTTCTGATAAGGAT	780
	* * * * *	
Hendra	ATCCCGAATTCCTGCACCAATTGGAGGTTTCAATTACTTGAATTTATCAAGAATATTTGT	840
Nipah_Virus	TGCATTAATCCCGGCACCTATTGGAGGATTCAATTACCTTAATTTGTCTAGAAATTTTGT	840
FelisCatus_Hongkong_FeMV	AGTTCTGATTCTCTGCACCATTAGGGGGCATGAACATATGAACATGAGCAGGTTATTTGT	840
FelisCatus_Switzerland_FeMV	AGTTTTAATTCCTGCACCATTGGGAGGTATGAATTATATGAACATGAGCAGGTTGTTTGT	840
Porcine_morbillivirus_Swine_Mexico	GGCACTCCTCCCTGCCCGATAGGAGGATTCAATTATTTGAACATGAGCCGCTGTTCGT	840
Dolphin	GGCACTACTACCTGCTCCTATAGGTGGCCTCAATTATCTTAATATGAGCAGATTATTCGT	840
Pilot_Whale_CEMV	GGCATTGTTACCTGCTCCTATAGGTGGCCTCAATTATCTTAATATGAGCAGATTATTTGT	840
Canine_CDV	GGCAATTCTCCCGCACCCATTGGCGGTTTAAATTACCTCAATATGAGTAGGCTCTTTGT	840
Ferret_Australia_CDV	GGCAATTCTCCCGCACCCATTGGCGGTTTAAATTACCTCAATATGAGTAGGCTCTTTGT	840
Harbourseal_Netherlands_WaddenSeal_PDV	GGCAATACTTCTGCTCCTATTGGTGGTCTAAATTACCTGAATATGAGTAGACTCTTTGT	840
GreySeal_Massachusetts_PhocineMorbillivirus	GGCAATACTTCTGCTCCTATTGGTGGTCTAAATTACCTGAATATGAGTAGACTCTTTGT	840
Harp_Seal_Canada_PhocineMorbillivirus	GGCAATACTTCTGCTCCTATTGGTGGTCTAAATTACCTGAATATGAGTAGACTCTTTGT	840
Siberian_Ibex_PPRV	GGCACTCTTGCCAGCACCCATCGGGGGTCTCAATTATCTTAACATGAGCAGGTTATTTGT	840
Goitered_gazelle_PPRV_Mongolia	GGCACTCTTGCCAGCACCCATCGGGGGTCTCAATTATCTTAACATGAGCAGGTTATTTGT	840
SaigaPPRV	GGCACTCTTGCCAGCACCCATCGGGGGTCTCAATTATCTTAACATGAGCAGGTTATTTGT	840
Bharal_Tibet_PPRV	GGCACTCTTGCCAGCACCCATCGGGGGTCTCAAAATTATCTTAACATGAGCAGGTTATTTGT	840
Ovis_aries_PPRV	GGCACTCTTGCCAGCACCCATCGGGGGTCTCAATTATCTTAACATGAGCAGGTTATTTGT	840
nubian_ibex_PPRV	GGCACTCTTGCCAGCACCCATCGGGGGTCTCAATTATCTTAACATGAGCAGGTTATTTGT	840
Measles_virus	GGCACTGTTGCCCGCTCCTATTGGGGGGATGAATTATCTGAATATGAGCAGGCTGTTTGT	840
Cattle_Rinderpest	GGCCCTTTTACCTGCTCCAATCGGGGGTATGAACACTTAAACATGAGTAGGTTATTTGT	840
Giraffe_Kenya_Rinderpest	GGCCCTTTTACCTGCTCCGATTGGGGGTATGAATTACTTAAACATGAGCAGGTTGTTTGT	840
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Hendra	AAGAAATATAGGAGACCTGTGACTGCATCACTAGCCGATCTAAAGAGAATGATAGAACA	900
Nipah_Virus	TAGAAATATAGGTGATCCGGTTACAGCATCTTTGGCTGATCTTAAGAGAATGATTGATCA	900
FelisCatus_Hongkong_FeMV	TAGGAATATAGGAGATCCCATTACTGCTTCATTGCTGATATAAAGCGCATGATTGAATG	900
FelisCatus_Switzerland_FeMV	TAGGAATATAGGAGATCCCATTACTGCTTCATTGCTGATATAAAGCGCATGATCGAGTG	900
Porcine_morbillivirus_Swine_Mexico	TAGAAATATAGGCGATCCGGTCACATCATCTATTGGCTGATTAAAAAGAATGATTAAAGC	900
Dolphin	AAGGAATATAGGTGATCCAGTTACGTCCTCTTTAGCTGACCTCAAAGAATGATAATTGC	900
Pilot_Whale_CEMV	GAGGAATATCGGTGACCCGGTTACATCATCTCTGGCTGACCTCAAAGAATGATAATTGC	900
Canine_CDV	CAGGAATATCGGGGATCCCGTGACATCTTCTATTGCTGACCTCAAACGAATGATCCGATC	900
Ferret_Australia_CDV	CAGGAATATCGGGGATCCCGTGACATCTTCTATTGCTGACCTCAAACGAATGATCCGATC	900
	Harbourseal_Netherlands_WaddenSeal_PDV	
	AAGGAATATAGGGGACCCTGTTACGTCCTCCATTGCAGATCTCAAGCGAATGATTAAGTC	900
	GreySeal_Massachusetts_PhocineMorbillivirus	
	AAGGAATATAGGGGACCCTGTTACGTCCTCCATTGCAGATCTCAAGCGAATGATTAAATC	900
Harp_Seal_Canada_PhocineMorbillivirus	AAGGAATATAGGGGACCCTGTTACGTCCTCCATTGCAGATCTCAAGCGAATGATTAAATC	900
Siberian_Ibex_PPRV	GAGAAATATCGGTGACCCGGTCACCTCCTCTATAGNCGACCTGAAGAGGATGATAGATGC	900
Goitered_gazelle_PPRV_Mongolia	GAGAAATATCGGTGACCCGGTCACCTCCTCTATAGCCGACCTGAAGAGGATGATAGATGC	900
SaigaPPRV	GAGAAATATCGGTGACCCGGTCACCTCCTCTATAGCCGACCTGAAGAGGATGATAGATGC	900
Bharal_Tibet_PPRV	GAGAAATATCGGTGACCCGGTCACCTCCTCTATAGCCGACCTGAAGAGGATGATAGATGC	900
Ovis_aries_PPRV	GAGAAATATCGGTGACCCGGTCACCTCCTCTATAGCCGACCTGAAGAGGATGATAGATGC	900
nubian_ibex_PPRV	GAGAAATATCGGTGATCCGGTCACCTCCTCTATAGCCGACCTGAAGAGGATGATAGATGC	900
Measles_virus	CAGAAACATCGGTGATCCAGTAACATCATCAATTGCTGATCTCAAGAGAATGATTCTCGC	900
Cattle_Rinderpest	CAGGAACATCGGGGATCCAGTGACATCGTCTATAGCTGACCTCAAGAGGATGATTGGTGTC	900
Giraffe_Kenya_Rinderpest	CAGGAACATCGGGGATCCAGTGACATCGTCTGATAGCTGACCTTAAGAGGATGATTGGTGTC	900
	*****	
Hendra	TGACTTGATGACAGATAAAGTTCTCCAAAAAGTGATGAATCAAGAACCAGGCGATGCAAG	960
Nipah_Virus	CAGTATTATGACTGAAAGCGTATTACAAAAAGTTATGAATCAAGAACCTGGTGATGCGAG	960
FelisCatus_Hongkong_FeMV	TGGGTTGTTAGGATGTAGTATTCTGTACAAATAATGTACCAAAAAATGTGGTTCTCCAA	960
FelisCatus_Switzerland_FeMV	TGGGTTGTTGGGATGTAGTATTCTGTACAGATAATGTACCAAAAAATGTGGTTCTCTAA	960
Porcine_morbillivirus_Swine_Mexico	AAATCTGCTGAGTGAACAATTCTTCATCAAGTGATGACTCAAGCCCCAGGTGATTCTGTC	960
Dolphin	AGGGATTATGCCTGAGGAGTCGATCCACCAAGTTATGACACAACAACCAGGGGATTCTCTC	960
Pilot_Whale_CEMV	AGGAATTATGCCTGAGGAATCAATCCACCAAGTTATGACACAACAACCAGGGGACTCTCTC	960
Canine_CDV	AGGCCTTCTTGGAGTGGAGATTCTACATCAGGTCATGACTCAATACCCAGGTGACTCTTC	960
Ferret_Australia_CDV	AGGCCTTCTTGGAGTGGAGATTCTACATCAGGTCATGACTCAATACCCAGGTGACTCTTC	960
	Harbourseal_Netherlands_WaddenSeal_PDV	
	AGGACTTCTGGGAGAGGAAATTCTGCATCAGGTTATGACTCAAAACCCAGGTGATTCCAC	960
	GreySeal_Massachusetts_PhocineMorbillivirus	
	AGGACTTCTGGGAGAGGAAATTCTGCATCAGGTTATGACTCAAAACCCAGGTGATTCCAC	960
	Harp_Seal_Canada_PhocineMorbillivirus	
	AGGACTTCTGGGAGAGGAAATTCTGCATCAGGTTATGACTCAAAACCCAGGTGATTCCAC	960
Siberian_Ibex_PPRV	TGGGCTAATGCCAGAAGAAACATTGCATCAAGTGATGACCCAGACCCCGGGAGAATCATC	960
Goitered_gazelle_PPRV_Mongolia	CGGGCTAATGCCAGAAGAAACATTGCATCAAGTGATGACCCAGACCCCGGGAGAATCATC	960
SaigaPPRV	CGGGCTAATGCCAGAAGAAACATTGCATCAAGTGATGACCCAGACCCCGGGAGAATCATC	960
Bharal_Tibet_PPRV	CGGGCTAATGCCAGAAGAAACATTGCATCAAGTGATGACCCAGACCCCGGGAGAATCATC	960
Ovis_aries_PPRV	TGGGCTAATGCCAGAAGAAACATTGCATCAAGTGATGACCCAGACCCCGGGAGAATCATC	960
nubian_ibex_PPRV	CGGGCTAATGCCAGAAGAAACATTGCATCAAGTGATGACCCAGACCCCGGGAGAATCATC	960
Measles_virus	ATCATAATGCCTGAAGAGACCTCCATCAAGTAATGACACAACAACCGGGGAGACTCTTC	960
Cattle_Rinderpest	GTCATGATGCCTGAGGAGACACTTCATCAGGTGATGACACAACAACCAGGTGACTCATC	960
Giraffe_Kenya_Rinderpest	ATCATTGATGCCTGAAGAGACACTTCATCAGGTGATGACACAACAACCGCTGGTGACTCATC	960
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Hendra	CTTCCTAGATTGGGCTAGTGATCCGTATTACAGGAAATCTACCGGATTACAGAGTATTAC	1020
Nipah_Virus	TTTCTTGACTGGGCCAGTGATCCATCTCGGGCAACTTGCCTGACTCACAAGCATCAC	1020
FelisCatus_Hongkong_FeMV	ATACTTAGACTGGGCTAGTGATCCTTATTCAATAAACCTTCCTTATAGCCAAAGTATGAC	1020
FelisCatus_Switzerland_FeMV	ATACTTAGACTGGGCTAGTGATCCTTACTCAATAAACCTCCCGTATGTCAAAGTATGAC	1020
Porcine_morbillivirus_Swine_Mexico	ATTTTTAGATTGGGCAAGTGATCCGTACTCAGCTAATCTCCCATGCACTCAAAGCATGAC	1020
Dolphin	TTTCCTAGATTGGGGCAGTGATCCCTACTCAGCTAATCTACCATGTGTCCAGAGTATCAC	1020
Pilot_Whale_CEMV	TTACCTAGATTGGGCTAGTGATCCGTACTCAGCAAAACCTACCGTGTATCCAAAGTATCAC	1020
Canine_CDV	TTATTTAGATTGGGCAAGTGACCCCTTATTCTGCCAATCTGCCCTGTGTCCAGAGCATAAC	1020
Ferret_Australia_CDV	TTATTTAGATTGGGCAAGTGACCCCTTATTCTGCCAATCTGCCCTGTGTCCAGAGCATAAC	1020
	Harbourseal_Netherlands_WaddenSeal_PDV	
	TTACTTGACTGGGCCAGTGACCCCTACTCAGCTAATCTACCATGCGTCCAAAGCATAAC	1020
	GreySeal_Massachusetts_PhocineMorbillivirus	
	TTACTTGACTGGGCCAGTGACCCCTACTCAGCTAATCTACCATGCGTCCAAAGCATAAC	1020
Harp_Seal_Canada_PhocineMorbillivirus	TTACTTGACTGGGCCAGTGACCCCTACTCAGCTAATCTACCATGCGTCCAAAGCATAAC	1020
Siberian_Ibex_PPRV	TTACCTAGATTGGGCAAGTGACCCCTTATTCTGCCAACCTACCCTGCGTACAGAGTATCAC	1020
Goitered_gazelle_PPRV_Mongolia	TTACCTAGATTGGGCAAGTGACCCCTTATTCTGCCAACCTACCCTGCGTACAGAGTATCAC	1020
SaigaPPRV	TTACCTAGATTGGGCAAGTGACCCCTTATTCTGCCAACCTACCCTGCGTACAGAGTATCAC	1020
Bharal_Tibet_PPRV	CTACCTCGATTGGGCAAGTGACCCCTTATTCTGCCAACCTACCCTGCGTACAGAGTATAAC	1020

Ovis_aries_PPRV	CTACCTCGATTGGGCAAGTGACCCTTATTCTGCCAACCTACCCTGCGTACAGAGTATAAC	1020
nubian_ibex_PPRV	CTACCTCGATTGGGCAAGTGACCCTTATTCTGCCAACCTACCCTGCGTACAGAGTATAAC	1020
Measles_virus	ATTCTAGACTGGGCTAGCGACCCTTACTCAGCAAATCTGTATGCGTCCAGAGCATCAC	1020
Cattle_Rinderpest	ATTTCTCGACTGGGCTAGTGACCCCTATTCTGCTAACCTAGTATGCATTCAAAGCATAAC	1020
Giraffe_Kenya_Rinderpest	ATTTCTCGACTGGGCTAGTGACCCCTACTCTGCTAACCTAGTCTGTATCCAAAGCATAAC	1020
	* * * * *	
Hendra	AAAAACGATCAAGAATATAACGGCTAGGACTATATTGAGGACATCACCGAATCCAATGCT	1080
Nipah_Virus	TAAAAACAATTAAAAATATCACAGCAAGGACTATACTGAGGAATCACCGAACCCAATGCT	1080
FelisCatus_Hongkong_FeMV	CAAGGTTTAAAAAATGTAACGGCAAGATATGTACTTATGCATAGTCCCAACCCTATGCT	
	1080	
FelisCatus_Switzerland_FeMV	CAAGGTATTGAAGAATGTAACGGCAAGATATGTGCTCATGCATAGCCCCAACCCCTATGCT	
	1080	
Porcine_morbillivirus_Swine_Mexico	CAGAGTCCTTAAAAATGTGACAGCTAGGCACGTGCTAGTCAACAGCCCCAAATCCTATGCT	
	1080	
Dolphin	TCGGCTGCTTAAGAATATAACTGCGAGGCATGTACTAATAAATAGTCCCAATCCGATGTT	1080
Pilot_Whale_CEMV	TCGACTACTCAAAAATATAACTGCGAGGCATGTATTAATAAATAGTCCCAATCCTATGTT	1080
Canine_CDV	CCGACTCCTTAAAAATATCACAGCTAGGCATGTCCTTATCAACAGTCCAAATCCGATGCT	1080
Ferret_Australia_CDV	CCGACTCCTTAAAAATATCACAGCTAGGCATGTCCTTATCAACAGTCCAAATCCGATGCT	1080
	Harbourseal_Netherlands_WaddenSeal_PDV	
	TCGACTTTTAAAGAATATTACAGCTAGGCATGTGCTCATAAACAGTCCCAATCCAATGTT	1080
GreySeal_Massachusetts_PhocineMorbillivirus	TCGACTTTTAAAGAATATTACAGCTAGGCATGTGCTCATAAACAGTCCCAATCCAATGTT	
	1080	
Harp_Seal_Canada_PhocineMorbillivirus	TCGACTTTTAAAGAATATTACAGCTAGGCATGTGCTCATAAACAGTCCCAATCCAATGTT	
	1080	
Siberian_ibex_PPRV	TCGCCTTCTCAAAAACATCACTGCACGATATATTTTAATCAGCAGCCCAAACCCGATGCT	1080
Goitered_gazelle_PPRV_Mongolia	TCGCCTTCTCAAAAACATCACTGCACGATATATTTTAATCAGCAGCCCAAACCCGATGCT	
	1080	
SaigaPPRV	TCGCCTTCTCAAAAACATCACTGCACGATATATTTTAATCAGCAGCCCAAACCCGATGCT	1080
Bharal_Tibet_PPRV	TCGCCTTCTCAAAAACATCACTGCACGATATATTTTGATCAGCAGCCCAAACCCGATGCT	1080
Ovis_aries_PPRV	TCGCCTTCTCAAAAACATCACTGCACGATATATTTTAATCAGCAGCCCAAACCCGATGCT	1080
nubian_ibex_PPRV	TCGCCTTCTCAAAAACATCACTGCACGATATATTTTAATCAGCAGCCCAAACCCGATGCT	1080
Measles_virus	TAGACTCCTCAAGAACATAACTGCAAGGTTTGTCTAATCCATAGTCCAAACCCAATGTT	1080
Cattle_Rinderpest	AAGGCTTCTCAAGAATATCACCGCAAAGTATGTTCTAATCAACAGCCCAAACCCGATGCT	1080
Giraffe_Kenya_Rinderpest	AAGACTTCTCAAGAATATCACCGCAAAGTATGTTCTAATCAACAGTCTTAACCCGATGCT	1080
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Hendra	GAAGGGTCTATTCCATGATAAATCATTCGAGGAAGATCTGGAGCTTGCTACTTTCCTAAT	1140
Nipah_Virus	AAAAGGTTTATTTCATGACAAATCTTTTGATGAAGATCTTGAAC TAGCTAGCTTCTTAAT	1140
FelisCatus_Hongkong_FeMV	CAAAGATTGTTCATGAAAAGTCTCAGGAAGAAGATGAAATCCTTGCTGAGTTTCTGTT	
	1140	
FelisCatus_Switzerland_FeMV	TAAAGATTATTCCATGAAAAGTCGCAAGAAGAGGATGAAATCTTGCTGAGTTTTTATT	
	1140	
Porcine_morbillivirus_Swine_Mexico	AAAGGGGTTGTTTCACATGAAAAGCCAGGAAGAGGATGAGACCCTAGCCAGTTTCCTGAT	
	1140	
Dolphin	AAGGGGTTATTCCATGCGGATAGCCATGAGGTAGATGAGAGTTTAGCAACTTTTCTCAT	1140
Pilot_Whale_CEMV	AAAAGGGTTATTCCATGACGAAAGTCAAGAGGAAGACGAAAGTCTAGCAACCTTTCTAAT	1140
Canine_CDV	GAGAGGATTGTTCATGATGAAAGTCAGGATGAGGATGAAGCTTTAGCAGCTTTCTTGAT	1140
Ferret_Australia_CDV	GAGAGGATTGTTCATGATGAAAGTCAGGATGAGGATGAAGCTTTAGCAGCTTTCTTGAT	1140
	Harbourseal_Netherlands_WaddenSeal_PDV	
	AAAGGGATTATTTCATGATGACAGTCAGGCCGAGGATGAGGCCCTAGCTGCTTTTTTAAT	1140
	GreySeal_Massachusetts_PhocineMorbillivirus	
	AAAGGGATTATTTCATGATGACAGTCAGACCGAGGATGAGGCCCTAGCTGCTTTTTTAAT	1140
Harp_Seal_Canada_PhocineMorbillivirus	AAAGGGATTATTTCATGATGACAGTCAGACCGAGGATGAGGCCCTAGCTGCTTTTTTAAT	
	1140	
Siberian_ibex_PPRV	GAAAGGGTTATTTCATGAGGGGAGTAGAGATGAAGACGAGGAGCTTGCAAGTTTCCTAAT	1140
Goitered_gazelle_PPRV_Mongolia	GAAAGGGTTATTTCATGAGGGGAGTAGAGATGAAGACGAGGAGCTTGCAAGTTTCCTAAT	
	1140	
SaigaPPRV	GAAAGGGTTATTTCATGAGGGGAGTAGAGATGAAGACGAGGAGCTTGCAAGTTTCCTAAT	1140
Bharal_Tibet_PPRV	GAGAGGATTGTTTCATGAGGGGAGTAGAGATGAAGACGAGGAGCTTGCAAGTTTCCTAAT	1140
Ovis_aries_PPRV	GAAAGGATTGTTTCATGAGGGGAGTAGAGATGAAGACGAGGAGCTTGCAAGTTTCCTAAT	1140
nubian_ibex_PPRV	GAAAGGACTATTTCATGAGGGGAGTAGAGATGAAGACGAGGAGCTTGCAAGTTTCCTAAT	1140
Measles_virus	AAAAGGGTTATTCCATGATGACAGTAAAGAAGAGGACGAGAGACTGGCGGCATTCTCAT	1140
Cattle_Rinderpest	CAGAGGTTTATTCCATGATGACAGCAAGGAAGAAGATGAGCAATTAGCCACCTTTCTAAT	1140
Giraffe_Kenya_Rinderpest	CAGAGGTTTGTTCACGATGACAGCAAGGAAGAAGACGAGCAACTGGCCACCTTTCTAAT	
	1140	
	* * * * *	
Hendra	GGATCGTAGAATTATATTGCCAGAGCCGCACATGAAATTTTAGATAATTCTTTGACAGG	1200
Nipah_Virus	GGACAGGAGGGTTATTACTAGAGCCGCTCATGAGATACTGGATAATTCATTGACAGG	1200
FelisCatus_Hongkong_FeMV	AGACCGACACTTAATAATCCCTAGAGCAGCAGCAGATTTTATCAAATTCAGTAACAGG	
	1200	
FelisCatus_Switzerland_FeMV	AGATCGACATTTAATAATCCCTAGGGCAGCACATGAAATTTTATCAAATTCAGTAACAGG	
	1200	
Porcine_morbillivirus_Swine_Mexico	GGATAGAGGAGTGATTATACCTAGGGCCGCTCATGAGATCTTAGACAACACTATTACCGG	
	1200	
Dolphin	GGATAGACACATCATCAGACCTAGAGCAGCTCATGAGATTCTCGACAACAGCATCGCAGT	1200
Pilot_Whale_CEMV	GGACAGGCAGATAATTATACCTAGAGCAGCCCATGAAATCCTTGACAACAGCATAACAGG	1200
Canine_CDV	GGATAGGAAAATTATTATCCCAAGGGCTGCACATGAAATCTGGATAACACAATCACGGG	1200

Ferret_Australia_CDV	GGATAGGAAAATTATTATCCCAAGGGCTGCACATGAAATCTAGATAACACGATCACGGG	1200
	Harbourseal_Netherlands_WaddenSeal_PDV	
	GGACAGAAAGGTTATCATTTCCAAGAGCTGCTCACGAGATTCTAGACAATACGATCACGGG	1200
	GreySeal_Massachusetts_PhocineMorbillivirus	
	GGACAGAAAGGTTATCATTTCCAAGAGCTGCTCACGAGATTCTAGACAATACGATCACGGG	1200
	Harp_Seal_Canada_PhocineMorbillivirus	
	GGACAGAAAGGTTATCATTTCCAAGAGCTGCTCACGAGATTCTAGACAATACGATCACGGG	1200
Siberian_Ibex_PPRV	GGATCGGCATATAATTGTTCCAAGAGCTGCACATGAAATCTTAGACCATAGTATAACCGG	1200
Goitered_gazelle_PPRV_Mongolia	GGATCGGCATATAATTGTTCCAAGAGCTGCACATGAAATCTTAGACCATAGTATAACCGG	1200
SaigaPPRV	GGATCGGCATATAATTGTTCCAAGAGCTGCACATGAAATCTTAGACCATAGTATAACCGG	1200
Bharal_Tibet_PPRV	GGATCGGCATATAATTGTTCCAAGAGCTGCACATGAAATCTTAGACCATAGTATAACCGG	1200
Ovis_aries_PPRV	GGATCGGCATATAATTGTTCCAAGAGCTGCACATGAAATCTTAGACCATAGCATAACCGG	1200
nubian_ibex_PPRV	GGATAGGCATATAATTGTTCCAAGAGCTGCACATGAAATCTTAGACCATAGCATAACCGG	1200
Measles_virus	GGACAGGCATATTATAGTACCTAGGGCAGCTCATGAAATCCTGGATCATAGTGTACAGG	1200
Cattle_Rinderpest	GGACAGGAGTGTAATAGTCCCGAGAGCCGCCACGAAATATTAGACCATAGTATAACTGG	1200
Giraffe_Kenya_Rinderpest	GGACAGAAGAAATCATAGTCCCCGAGAGCTGCCACGAAATATTGGACCATAGTATAACTGG	1200
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Hendra	TGCTAGAGAGGAAATTGCTGGATTACTTGACACAACAAAGGGGCTAATAAGATCAGGATT	1260
Nipah_Virus	TGCCAGAGAGGAAATTGCTGGTTTATTAGATACAATAAGGCTTGATCAGATCAGGGCT	1260
FelisCatus_Hongkong_FeMV	TGCTAGAGAATCTATAGCAGGTATGCTTGACACTACTAAGGGTTTAAATCCGTGCTAGTAT	1260
FelisCatus_Switzerland_FeMV	TGCTAGAGAATCTATTGCAGGTATGCTTGACACTACTAAGGGGTGATTCTGCTAGTAT	1260
Porcine_morbillivirus_Swine_Mexico	TGCACGAGAGGCAATTGCTGGGATGCTCGACACCACCAAGGGCTTATTCGGGCTAGCAT	1260
Dolphin	GGCTCGGAATCACTTGCAGGGATGCTCGATACTACTAAAGGGCTAATAAGGGCTAGTAT	1260
Pilot_Whale_CEMV	AGCTCGCGAATCAATTGCCGGATGCTCGATACTACTAAAGGTTTAAATAAGGGCCAGTAT	1260
Canine_CDV	TGCAAGAGAGGCAATTGCCGGAATGCTAGACACCACAAAGGGGTGATAAGAGCAAGCAT	1260
Ferret_Australia_CDV	TGCAAGAGAGGCAATTGCCGGAATGCTAGACACCACAAAGGGGTGATAAGAGCAAGCAT	1260
	Harbourseal_Netherlands_WaddenSeal_PDV	
	TGCAAGGGAAGCAATTGCAGGGATGCTGGATACGACGAAGGACTGATTAGGGCAAGTAT	1260
	GreySeal_Massachusetts_PhocineMorbillivirus	
	TGCAAGGGAAGCAATTGCAGGGATGCTGGATACGACGAAGGACTGATTAGGGCAAGTAT	1260
	Harp_Seal_Canada_PhocineMorbillivirus	
	TGCAAGGGAAGCAATTGCAGGGATGCTGGATACGACGAAGGACTGATTAGGGCAAGTAT	1260
Siberian_Ibex_PPRV	AGCAAGAGAAGCTATAGCCGGGATGTTGGACACCACCAAGGGTCTGATTAGAACAAGTAT	1260
Goitered_gazelle_PPRV_Mongolia	AGCAAGAGAAGCTATAGCCGGGATGTTGGACACCACCAAGGGTCTGATTAGAACAAGTAT	1260
SaigaPPRV	AGCAAGAGAAGCTATAGCCGGGATGTTGGACACCACCAAGGGTCTGATTAGAACAAGTAT	1260
Bharal_Tibet_PPRV	GGCAAGAGAAGCTATAGCCGGGATGTTGGACACCACCAAGGGTCTGATTAGAACAAGTAT	1260
Ovis_aries_PPRV	GGCAAGAGAAGCTATAGCCGGGATGTTGGACACCACCAAGGGTCTGATTAGAACAAGTAT	1260
nubian_ibex_PPRV	GGCAAGAGAAGCTATAGCCGGGATGTTGGACACCACCAAGGGTCTGATTAGAACAAGTAT	1260
Measles_virus	GGCAAGAGAGTCTATTGCAGGATGCTAGATACCACAAAAGGCCTGATTGAGCCAGCAT	1260
Cattle_Rinderpest	AGCCCGGGAAGCAATTGCAGGGATGCTAGATACAATAAGGACTCATCAGGACTAGCTC	1260
Giraffe_Kenya_Rinderpest	GGCCCGGGAAGCAATTGCAGGAATGCTAGATACAATAAGGGGCTCATTAGGACTAGCAT	1260
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Hendra	GAAAAAGAGCGGGATACAACCTAAGTTAGTGTCTAGACTGTCTAACCATGATTATAATCA	1320
Nipah_Virus	AAGAAAGAGTGGAATTCAGCCAAAGTTAGTTTCTAGATTATCTCATCATGATTATAATCA	1320
FelisCatus_Hongkong_FeMV	GTCAAGAGGTGGGTGACCTCATCACTTGTTTTAAATATCAACATATGATTACCAACA	1320
FelisCatus_Switzerland_FeMV	GTCAAGAGGTGGTCTGACATCTGCACTTGTTTTGAAATATCAACATATGATTACCAGCA	1320
Porcine_morbillivirus_Swine_Mexico	GCAAAGAGGAGGCCTAACTCCAAGGATAATCACGCGATTATCCACATATGACTATGACCA	1320
Dolphin	GAAAAGAGGTGGACTGACCCACGAATCATCAGAGATTATCAAATTATGATTATGATCA	1320
Pilot_Whale_CEMV	GAAAAGAGGTGGATTGACCCCAAGAATCATCAGAGATTGTCAAATTATGATTACGAACA	1320
Canine_CDV	GAAAAGAGGAGGTCTAACCCCTAGAATAATAACCCGTTTGTCAACTTACGATTATGAGCA	1320
Ferret_Australia_CDV	GAAAAGAGGAGGTCTAACCCCTAGAATAATAACCCGTTTGTCAACTTACGATTATGAGCA	1320
	Harbourseal_Netherlands_WaddenSeal_PDV	
	GAGGAGAGGAGGACTTACTCCGAGGATAATAACTCGGTTGTCAACTTATGATTATGAGCA	1320
	GreySeal_Massachusetts_PhocineMorbillivirus	
	GAGGAGAGGAGGACTTACTCCGAGGATAATAACTCGGTTGTCAACTTATGATTATGAGCA	1320
Harp_Seal_Canada_PhocineMorbillivirus	GAGGAGAGGAGGACTTACTCCGAGGATAATAACTCGGTTGTCAACTTATGATTATGAGCA	1320
Siberian_Ibex_PPRV	GAAACGGGGCGGCCTCACCCCTCGAGTCTTAGCCCGCCTTTCCAATTATGATTATGAACA	1320
Goitered_gazelle_PPRV_Mongolia	GAAACGGGGCGGCCTCACCCCTCGAGTCTTAGCCCGCCTTTCCAATTATGATTATGAACA	1320
SaigaPPRV	GAAACGGGGCGGCCTCACCCCTCGAGTCTTAGCCCGCCTTTCCAATTATGATTATGAACA	1320
Bharal_Tibet_PPRV	GAAACGGGGTGGCCTCACCCCTCGAGTCTTAGCCCGCCTTTCCAATTATGATTATGAACA	1320
Ovis_aries_PPRV	GAAACGGGGTGGCCTCACCCCTCGAGTCTTAGCCCGCCTTTCCAATTATGATTATGAACA	1320
nubian_ibex_PPRV	GAGACGGGGTGGCCTCACCCCTCGAGTCTTAGCCCGCCTTTCCAATTATGATTATGAACA	1320
Measles_virus	GAGGAAGGGGGGTTAACTCTCGAGTGATAACCAGATTGTCCAATTATGACTATGAACA	1320
Cattle_Rinderpest	CAGAAGAGGGGGCTGACCACAGAGTGATAGCAAGACTATCCACATATGACTATGAGCA	1320
Giraffe_Kenya_Rinderpest	GAGGAGAGGGGGCTAACCACCAGGGTGATAGCAAGACTATCCACATATGATTATGAGCA	1320
	*** **	
Hendra	GTTCTGATACTCAATAGACTTTTGTCCAATAAAAAGAGAAACGATCTTATATCCCCTAA	1380



Nipah_Virus	ATTTTAAATACTGAACAAACTTCTATCAAACAGAAGACAAAATGACTTGATATCATCAA	1380
FelisCatus_Hongkong_FeMV	GTTTAGAACATGTCTTGAATGGCTTTATGCTCCTACTACGGGAATTGCTGTAGCGTTGA	1380
FelisCatus_Switzerland_FeMV	GTTTAGAACGTGTCTTGAATGGCTTTATGCTCCTACCACGGGAATTGCTGTGAGTGTTGA	1380
Porcine_morbillivirus_Swine_Mexico	ATTCAAGGCTGGTATGAGATTGTTTCATGGGTAAAGGAGTCAATTTGTTAATTGATCAGGA	1380
Dolphin	GTCTAAAATGGGAATATCACTTTTAACTGTGAAGAAACGGAAACAATCTTATCGATAGGGA	1380
Pilot_Whale_CEMV	ATTTAAAATGGGGATATTGCTTTTGACTGGAAAGAAGCGGAACAATCTAATTACAGCGA	1380
Canine_CDV	ATTTAGGGCAGGTATCAGACTGTTCTCAGGGAAGGGGCATGATCAGCTCATCGATCAAGA	1380
Ferret_Australia_CDV	ATTTAGGGCAGGTATCAGACTGTTGTCTCAGGGAAGGGGCATGATCCGCTCATCGATCAAGA	1380
	Harbourseal_Netherlands_WaddenSeal_PDV	
	GTTTCAGAGCCGGCATCAGGTTGCTATCAGGGAAGAGACGTGATCCACTCATAGACCAAGA	1380
	GreySeal_Massachusetts_PhocineMorbillivirus	
	GTTTCAGAGCCGGCATCAGGTTGCTATCAGGGAAGAGACGTGATCCACTCATAGACCAAGA	1380
	Harp_Seal_Canada_PhocineMorbillivirus	
	GTTTCAGAGCCGGCATCAGGTTGCTATCAGGGAAGAGACGTGATCCACTCATAGACCAAGA	1380
Siberian_Ibex_PPRV	ATTCCGATCCGGGATAACACTATTAAACAAAGAAAGGGCAGTGTTATCTCATTGACAAGGA	1380
Goitered_gazelle_PPRV_Mongolia	ATTCCGATCCGGGATAACACTATTAAACAAAGAAAGGGCAGTGTTATCTCATTGACAAGGA	1380
SaigaPPRV	ATTCCGATCCGGGATAACACTATTAAACAAAGAAAGGGCAGTGTTATCTCATTGACAAGGA	1380
Bharal_Tibet_PPRV	ATTCCGATCCGGGATAACACTATTGACAAAGAAAGGGCAGTGTTATCTCATTGACAAGGA	1380
Ovis_aries_PPRV	ATTCCGATCCGGGATAACACTATTGACAAAGAAAGGGCAGTGTTATCTCATTGACAAGGA	1380
nubian_ibex_PPRV	ATTCCGATCCGGGATAACACTATTGACAAAGAAAGGGCAGTGTTATCTCATTGACAAGGA	1380
Measles_virus	ATTTAGAGCAGGGATGGTGCTATTGACAGGAAGAAAGAGAAATGTCCTCATTGACAAAGA	1380
Cattle_Rinderpest	GTTTAGATCTGGGATGGTGCTTCTAACAGGCTCAAAGAGAAATTATCTCATTGATAGAGA	1380
Giraffe_Kenya_Rinderpest	GTTTAGGTCTGGGATGGTGCTTCTAACAGGCTCAAAGAGAAATTATCTCATTGATAGAGA	1380
	* * * * *	
Hendra	AACATGTTTCAGTGGATTGCGCAAGGCTCTTCGTTGTCTATGTGGAGAGATCTTGCTCT	1440
Nipah_Virus	TACTTGCTCAGTTGACTTGGCAGCAGCAATTGAGATCTCACATGTGGAGGGAATTAGCGTT	1440
FelisCatus_Hongkong_FeMV	TTCTTGCTCTGTATTCTTAGCTAAGACCATCCGGAAGAGAATGTGGGTTACACCTAACTAA	1440
FelisCatus_Switzerland_FeMV	TTCTTGTTCCGTTTCTTAGCTAAGACTATCCGAAAAAGAATGTGGGTTACACCTAACTAA	1440
Porcine_morbillivirus_Swine_Mexico	TTCATGTTCCGTCAGCTCGCCGAGCACTTAGAAATCACATGTGGGCAACTTTGGCCAA	1440
Dolphin	GTCTTGCTCAGTCCAGCTGGCCCGAGCCCTCAGAAGTCACATGTGGGCGAAACTCGCAAG	1440
Pilot_Whale_CEMV	GTCTTGTTTCAGTTCAACTGGCTCGGGCTCTTAGAAGTCACATGTGGGCGAAACTCGCAAG	1440
Canine_CDV	CTCATGTTCCGTCAGTTAGCGAGAGCATTAAGGAACCATGTGGGCGAAAGCTGGCGAA	1440
Ferret_Australia_CDV	CTCATGTTCCGTCAGTTAGCGAGAGCATTAAGGAACCATGTGGGCGAAAGCTGGCGAA	1440
	Harbourseal_Netherlands_WaddenSeal_PDV	
	CTCATGCTCTGTACAACCTAGCAAGAGCATTGAGGAATCATATGTGGGCTAAATTAGCTAA	1440
	GreySeal_Massachusetts_PhocineMorbillivirus	
	TTTCATGCTCTGTACAACCTAGCAAGAGCATGAGGAATCATATGTGGGCTAAATTAGCTAA	1440
Harp_Seal_Canada_PhocineMorbillivirus	CTCATGCTCTGTACAACCTAGCAAGAGCACTGAGGAATCATATGTGGGCTAAATTAGCTAA	1440
Siberian_Ibex_PPRV	CTCGTGCTCGGTGCAGCTCGCTATAGCTCTGAGGGGGCCACATGTGGGCTAAGTTGGCTCG	1440
Goitered_gazelle_PPRV_Mongolia	CTCGTGCTCGGTGCAGCTCGCTATAGCTCTGAGGGGGCCACATGTGGGCTAAGTTGGCTCG	1440
SaigaPPRV	CTCGTGCTCGGTGCAGCTCGCTATAGCTCTGAGGGGGCCACATGTGGGCTAAGTTGGCTCG	1440
Bharal_Tibet_PPRV	TTTCGTGCTCGGTGCAGCTCGCTATAGCTCTGAGGAGCCACATGTGGGCTAGGTTGGCTCG	1440
Ovis_aries_PPRV	CTCGTGCTCGGTGCAGCTCGCTATAGCTCTGAGGAGCCACATGTGGGCTAGGTTGGCTCG	1440
nubian_ibex_PPRV	CTCGTGCTCGGTGCAGCTAGCTATAGCTCTGAGGAGCCATATGTGGGCTAGGTTGGCTCG	1440
Measles_virus	GTCATGTTTCAGTGCAGCTGGCTAGAGCCCTAAGAAGCCATATGTGGGCAAGACTAGCTCG	1440
Cattle_Rinderpest	CTCATGCTCAGTCCAGCTGGCTAGGGCTCTGAGAAGCCACATGTGGGCGAGGCTGCCCCG	1440
Giraffe_Kenya_Rinderpest	TTTCATGCTCAGTCCAGCTGGCTAGGGCGCTGAGAAGCCACATGTGGGCGAGGCTTGCCCCG	1440
	* * * * *	
Hendra	TGGTCGATCAATCTATGGACTTGAAGTGCCTGACGCTTTGGAAGCAATGACTGGAAGATA	1500
Nipah_Virus	AGGTAGAGTAATATACGGTCTTGAGGTACCATGCACTTGAGGCTATGGTGGAAGGTA	1500
FelisCatus_Hongkong_FeMV	AGGAAGGGGAGATTTATGGGTTAGAAGTACCTGACATTTTGAATGTATGCAAAACAATAT	1500
FelisCatus_Switzerland_FeMV	AGGAAGGGGAGATTTACGGGTTGGAAGTACCCGACATTTTGAATGCATGCAAAACAACAT	1500
Porcine_morbillivirus_Swine_Mexico	AGGAAGACCAATATACGGATTAGAAGTGCCTGATATCTTGAATCAATGAAGGGCCAATT	1500
Dolphin	AGGAAGGTCGATATACGGACTTGAGGTTCTGTTGTAAGTCAATGAAAGGGTACAT	1500
Pilot_Whale_CEMV	AGGTAGGTTGATATACGGACTTGAGGTTCTGTTGTAAGTCAATGAAAGGGTACAT	1500
Canine_CDV	GGGTGCTCCTATTATGGTCTAGAAGTCCCGATATCCTTGAATCAATGAAGGGTTATAT	1500
Ferret_Australia_CDV	GGGTGCTCCTATTATGGTCTAGAAGTCCCGATATCCTTGAATCAATGAAGGGTTATAT	1500
	Harbourseal_Netherlands_WaddenSeal_PDV	
	GGGTAGACCTATTTATGGGCTAGAAGTGCCCGACATACTAGAGTCTATGAGAGGATATAT	1500
GreySeal_Massachusetts_PhocineMorbillivirus	GGGTAGACCTATTTATGGGCTAGAAGTGCCCGACATACTAGAGTCTATGAGAGGATATAT	1500
Harp_Seal_Canada_PhocineMorbillivirus	GGGTAGACCTATTTATGGGCTAGAAGTGCCCGACATACTAGAGTCTATGAGAGGATATAT	1500
Siberian_Ibex_PPRV	CGGGAGACCAATCTATGGGTTGGAGGTGCCTGATGTATTAGAATCGATGAACGGCTACCT	1500

Goitered_gazelle_PPRV_Mongolia	CGGGAGACCAATCTATGGGTTGGAGGTGCCTGATGTATTAGAATCGATGAACGGCTACCT	
	1500	
SaigaPPRV	CGGGAGACCAATCTATGGGTTGGAGGTGCCTGATGTATTAGAATCGATGAACGGCTACCT	1500
Bharal_Tibet_PPRV	CGGGAGACCAATCTATGGGTTGGAGGTGCCCCGATATATTAGAATCGATGAACGGCTACCT	1500
Ovis_aries_PPRV	CGGGAGACCAATCTATGGGTTGGAGGTGCCCCGATATATTGGAATCGATGAACGGCTACCT	1500
nubian_ibex_PPRV	CGGGAGACCAATCTATGGGTTGGAGGTGCCCCGATATATTAGAATCGATGAACGGCTACCT	1500
Measles_virus	AGGACGGCCTATTACGGCCTTTGAGGTCCCTGATGTACTAGAATCTATGCGAGGCCACCT	1500
Cattle_Rinderpest	AGGAAGGCCCATATATGGCTTAGAGGTGCCGACGTGCTAGAATCAATGAGAGGCCACCT	1500
Giraffe_Kenya_Rinderpest	AGGAAGGCCCATATATGGCTTAGAAGTGCCGACGTACTTGAGTCAATGAGAGGCCACCT	1500
	*** **	
Hendra	TATTACAGGGAGTATGGAATGCCAACCTTTGTGATCAAGGGAATACTATGTACGGTTGGTT	1560
Nipah_Virus	TATAACAGGGAGCTTAGAGTGCCAAATTTGTGAGCAGGGAAACACGATGTATGGGTGGTT	1560
FelisCatus_Hongkong_FeMV	TATTGTTGATCAGCAAGATTGTTACTCATGTATTCAAGGATCAAGATATTATACATGGTT	1560
FelisCatus_Switzerland_FeMV	AATTATCGATCATGAAGATTGTTACTCATGTATTCAAGGATCGAGATATTACACATGGTT	1560
Porcine_morbillivirus_Swine_Mexico	AATCATGAGGCATGAGTCATGTAACCTATGTATTACGGGATCGCAAATTTACGGATGGTT	
	1560	
Dolphin	TATTAAACGTCATGAGTCTTGTTCATTATGTGAAACTGGCTCACTGAATTATGGTTGGTT	1560
Pilot_Whale_CEMV	GATTAAACGTCATGAGTCTTGTTCATTATGTGAAACTGGCTCACTGAATTATGGGTGGTT	1560
Canine_CDV	GATTAGAAGACATGAATCCTGTTTGCTTTGCGCATCAGGCTCTCATAACTATGGTTGGTT	1560
Ferret_Australia_CDV	GATCAGAAGACATGAATCCTGTTTGCTTTGCGCATCAGGCTCTCATAACTATGGTTGGTT	1560
	Harbourseal_Netherlands_WaddenSeal_PDV	
	GATTAGGAGGCATGAGTCTTCAATGTGTTTCAGCTGGTTCTCTCAATTACGGTTGGTT	1560
	GreySeal_Massachusetts_PhocineMorbillivirus	
	GATTAGGAGGCATGAGTCTTCAATGTGTTTCAGCTGGTTCTCTCAATTACGGTTGGTT	1560
Harp_Seal_Canada_PhocineMorbillivirus	GATTAGGAGGCATGAGTCTTCAATGTGTTTCAGCTGGTTCTCTCAATTACGGTTGGTT	
	1560	
Siberian_ibex_PPRV	TATTAAACGCCACGAGTCGTGTGCTATCTGTGAAACGGGCTCAAGTCACTACGGATGGTT	1560
Goitered_gazelle_PPRV_Mongolia	TATTAAACGCCACGAGTCGTGTGCTATCTGTGAAACGGGCTCAAGTCACTACGGATGGTT	
	1560	
SaigaPPRV	TATTAAACGCCACGAGTCGTGTGCTATCTGTGAAACGGGCTCAAGTCACTACGGATGGTT	1560
Bharal_Tibet_PPRV	TATCAAACGCCACGAGTCTTGTGCTATCTGTGAAACGGGCTCAAGTCACTACGGATGGTT	1560
Ovis_aries_PPRV	TATCAAACGCCACGAGTCTTGTGCTATCTGTGAGACGGGCTCAAGTCACTACGGATGGTT	1560
nubian_ibex_PPRV	TATCAAACGCCACGAGTCTTGTGCTATCTGTGAGACGGGCTCAAGTCACTACGGATGGTT	1560
Measles_virus	TATTCGGCGTCATGAGACATGTGTCTATCTGCGAGTGTGGATCAGTCAACTACGGATGGTT	1560
Cattle_Rinderpest	GATCCAACGCCATGCAACCTGCTATGTGACTTTGGTTTCAGCCAATTGTTGGTT	1560
Giraffe_Kenya_Rinderpest	GATCCAACGCCATGCACTCTGCATCTTATGTGACTTTGGTTTCATCCAATATGGTTGGTT	1560
	** **	
Hendra	TTTCGTGCCACGAGATTACAATTAGACCAAGTGAATAAAGAGCACTCATCCATTAGAGT	1620
Nipah_Virus	CTTTGTACCTAGGGATTCCCAATTGGATCAGGTAGATAGAGAGCACTCATCAATAAGAGT	1620
FelisCatus_Hongkong_FeMV	TTTTGTACCTTCAAATTGTCAACTCGATCAAATAAATAAGTCAACAAATTCTCTCCGAGT	
	1620	
FelisCatus_Switzerland_FeMV	TTTTGTGCCTTCAAATTGTCAACTAGATCAAATAAATAAGTCAACAAATTCTCTCCGAGT	
	1620	
Porcine_morbillivirus_Swine_Mexico	TTTTGTGCCATCAAATTGCCAATCTGATAACATTACATCAGGCACATCTAGCCTTAGGGT	
	1620	
Dolphin	CTTTGGTCCCGCCAATTGCCAATTAGATAATATTTCCAAGGAGACATCATCTTTACGAGT	1620
Pilot_Whale_CEMV	CTTTGTCCATCCAATTGCCAATTAGATGGGATCTCTAAGGAAACATCATCTTTGAGAGT	1620
Canine_CDV	TTTTTATACCAGCGAATTGCCAATTGGATAGTATTACAGAGGGAACATCTGCACTGAGGGT	1620
Ferret_Australia_CDV	TTTTTATACCAGCGAATTGCCAATTGGATAGTATTACAGAGGGAACATCTGCACTGAGGGT	1620
	Harbourseal_Netherlands_WaddenSeal_PDV	
	CTTTGTACCAGCCAATTGTCAGCTTGATAGTATTACAGAAGGAACATCTGCATTAAGGGT	1620
	GreySeal_Massachusetts_PhocineMorbillivirus	
	CTTTGTACCAGCCAATTGTCAGCTTGATAGTATTACAGAAGGAACATCTGCATTAAGGGT	1620
Harp_Seal_Canada_PhocineMorbillivirus	CTTTGTACCAGCCAATTGTCAGCTTGATAGTATTACAGAAGGAACATCTGCATTAAGGGT	
	1620	
Siberian_ibex_PPRV	TTTCGTCCCTGCAGGGTGCCAGCTTGACGATGTATCTAGAGAGACTTCGGCTCTTCGTGT	1620
Goitered_gazelle_PPRV_Mongolia	TTTCGTCCCTGCAGGGTGCCAGCTTGACGATGTATCTAGAGAGACTTCGGCTCTTCGTGT	
	1620	
SaigaPPRV	TTTCGTCCCTGCAGGGTGCCAGCTTGACGATGTATCTAGAGAGACTTCGGCTCTTCGTGT	1620
Bharal_Tibet_PPRV	TTTCGTCCCTGCAGGGTGCCAGCTTGACGATATATCTAGAGAGACTTCGGCTCTTCGTGT	1620
Ovis_aries_PPRV	TTTTGTCCCTGCAGGGTGCCAGCTTGACGATGTATCTAGAGAGACTTCGGCTCTTCGTGT	1620
nubian_ibex_PPRV	CTTTGTCCCTGCAGGGTGCCAGCTTGACGATGTATCTAGGGAGACTTCGGCTCTTCGTGT	1620
Measles_virus	TTTTGTCCCTCGGGTTGCCAATGGATGATATTGACAAGGAAACATCATCTTCGAGT	1620
Cattle_Rinderpest	TTTTGTACCATCGAAGCTGCAGTTGATGACATAGAGAGACGTGACACTCAGGGT	1620
Giraffe_Kenya_Rinderpest	TTTTGTACCATCGAAGCTGCAGTTAGATGACATAGAGAGGAGACATCAGCACTCAGGGT	1620
	** **	
Hendra	ACCTTACGTCGGCTCAAGCACTGATGAGAGGTGAGATATCAAACCTAGGAAACGTCAAGAG	1680
Nipah_Virus	ACCTTATGTAGGATCAAGTACGGATGAAAGATCGGATATCAAACCTAGGAAATGTCAAAAG	1680
FelisCatus_Hongkong_FeMV	ACCTTATGTTGGATCAACAACCTGAAGAAAGGAGTGATATGAAGTTGTCATATGTGAGGTC	
	1680	
FelisCatus_Switzerland_FeMV	TCCTTACGTTGGATCAACAACAGAAAGAAAGGAGTGATATGAGGTTGTCATATGTCAGGTC	
	1680	
Porcine_morbillivirus_Swine_Mexico	TCCATATATCGGATCTACCACAGAGGAGAGAACGGATATGAAGCTGTCAATTTGTCAAGTC	
	1680	
Dolphin	TCCCTATATTGGGTCAACAACAGAGGAAAGGACAGACATGAAATTAGCATTGGCCAAGTC	1680
Pilot_Whale_CEMV	TCCCTATATTGGATCAACAACAGAAAGGACAGATATGAAGTTGGCATTCGTTAAATC	1680

Canine_CDV	GCCATACATAGGGTCCACAACAGAAGAAAGAACAGACATGAAACTAGCATTCGTCAAATC	1680
Ferret_Australia_CDV	GCCATACATAGGGTCCACAACAGAAGAAAGAACAGACATGAAACTAGCATTCGTCAAATC	1680
	Harbourseal_Netherlands_WaddenSeal_PDV	
	GCCATACATTGGGTCTACAACCTGAAGAGAGAACGGATATGAAGCTAGCATTTGTGAAGTC	1680
	GreySeal_Massachusetts_PhocineMorbillivirus	
	GCCATACATCGGGTCTACAACCTGAAGAAAGAACGGATATGAAGCTAGCATTTGTGAAGTC	1680
Harp_Seal_Canada_PhocineMorbillivirus	GCCATACATCGGGTCTACAACCTGAAGAGAGAACGGATATGAAGCTAGCATTTGTGAAGTC	1680
Siberian_Ibex_PPRV	ACCTTATGTCTGGATCAACAACCTGAGGAAAGGACAGACATGAAACTTGCATTTGTTAGGTC	1680
Goitered_gazelle_PPRV_Mongolia	ACCTTATGTCTGGATCAACAACCTGAGGAAAGGACAGACATGAAACTTGCATTTGTTAGGTC	1680
SaigaPPRV	ACCTTATGTCTGGATCAACAACCTGAGGAAAGGACAGACATGAAACTTGCATTTGTTAGGTC	1680
Bharal_Tibet_PPRV	ACCTTATGTCTGGATCAACAACCTGAGGAAAGGACAGACATGAAACTTGCATTTGTTAGATC	1680
Ovis_aries_PPRV	ACCTTATGTCTGGATCAACAACCTGAGGAAAGGACAGACATGAAACTTGCCTTTTGTAGGTC	1680
nubian_ibex_PPRV	ACCTTATGTCTGGATCAACAACCTGAGGAAAGGACAGACATGAAACTTGCCTTTTGTAGGTC	1680
Measles_virus	CCCATATATTGGTTCTACCACTGATGAGAGAACAGACATGAAGCTCGCCTTCGTAAGAGC	1680
Cattle_Rinderpest	CCCCTACATCGGATCGACAACAGATGAGAGGACTGATATGAAGCTCGCATTGTGTAAGTC	1680
Giraffe_Kenya_Rinderpest	CCCCTACATCGGATCGACAACAGATGAGAGGACTGATATGAAGCTTGCATTTGTGTAATC	1680
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Hendra	ACCGACAAGAGCACTGAGATCTGCCATCCGAATTGCAACTGTTTATACCTGGGCATACGG	1740
Nipah_Virus	ACCAACTAAGGCCTTGCCTTCTGCTATCAGAATTGCGACAGTATATACTTGGGCCTATGG	1740
FelisCatus_Hongkong_FeMV	ACCTAGTCGGCCACTTAAAGCAGCAGTTTCCAATTGCAGCAGTATATACATGGGCTTATGG	1740
FelisCatus_Switzerland_FeMV	ACCAAGTCGACCACTTAAAGCAGCAGTTAGAATTGCAGCTGTATATACATGGGCTTATGG	1740
Porcine_morbillivirus_Swine_Mexico	ACCCAGCCGATCACTTAAATCAGCTGTAAGAATAGCCACCGTATACTCTTGGGCCTACGG	1740
Dolphin	CCCTAGTCGCTCCCTCAAATCTGCCGTGAGAATTGCTACAGTGACTCTTGGGCTTATGG	1740
Pilot_Whale_CEMV	TCCAAGTCGCTCTCTTAAAGCAGCTGTGAGAATTGCCACAGTGTAATCTCTGGGCTTATGG	1740
Canine_CDV	TCCTAGTAGGTCTCTAAAATCAGCAGTGAGAATAGCAACTGTGTACTCATGGGCCTATGG	1740
Ferret_Australia_CDV	TCCTAGTAGGTCTCTAAAATCAGCAGTGAGAATAGCAACTGTGTACTCATGGGCCTATGG	1740
	Harbourseal_Netherlands_WaddenSeal_PDV	
	TCCAAGCAGATCCCTTAAATCAGCAGTTAGGATAGCCACTGTCTACTCTTGGGCTTATGG	1740
	GreySeal_Massachusetts_PhocineMorbillivirus	
	TCCAAGCAGATCCCTTAAATCAGCAGTTAGGATAGCCACTGTCTACTCTTGGGCTTATGG	1740
Harp_Seal_Canada_PhocineMorbillivirus	TCCAAGCAGATCCCTTAAATCAGCAGTTAGGATAGCCACTGTCTACTCTTGGGCTTATGG	1740
Siberian_Ibex_PPRV	TCCAAGTAGATCCCTCAAATCAGCAGTTAGAATTGCAACAGTTTACTCATGGGCTTACGG	1740
Goitered_gazelle_PPRV_Mongolia	TCCAAGTAGATCCCTCAAATCAGCAGTTAGAATTGCAACAGTTTACTCATGGGCTTACGG	1740
SaigaPPRV	TCCAAGTAGATCCCTCAAATCAGCAGTTAGAATTGCAACAGTTTACTCATGGGCTTACGG	1740
Bharal_Tibet_PPRV	TCCAAGTAGATCCCTCAAATCAGCAGTTAGAATTGCAACAGTTTACTCATGGGCTTACGG	1740
Ovis_aries_PPRV	TCCAAGTCGATCCCTCAAGTCAGCAGTCAGAATTGCAACAGTTTACTCATGGGCTTACGG	1740
nubian_ibex_PPRV	TCCAAGTCGATCCCTCAAATCAGCAGTCAGAATTGCAACAGTTTACTCATGGGCTTACGG	1740
Measles_virus	CCCAAGTAGATCCCTTGGCATCTGCCGTTAGAATAGCAACAGTGTAATCATGGGCTTACGG	1740
Cattle_Rinderpest	ACCCAGTCGAACCTCTCGGTCAGCTGTGCGGATAGCCACCGTGTACTCATGGGCATACGG	1740
Giraffe_Kenya_Rinderpest	ACCAAGTCGATCCCTTGGGTCAGCTGTGCGGATAGCCACTGTGTACTCATGGGCATACGG	1740
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Hendra	AGATTCTGAAGAAAGTTGGTATGAGGCTTGGTACTTGGCTTCCCAGAGGGTCAACATTGA	1800
Nipah_Virus	GGACAATGAAGAGTGTGGTATGAAGCTTGGTACCTAGCGTCTCAGAGGGTAAACATAGA	1800
FelisCatus_Hongkong_FeMV	TGATGATAATTTGCTTGGCATGAAGCTTGGTATTTAGCAAGGACTAGAGCAAATATTAC	1800
FelisCatus_Switzerland_FeMV	TGATGATGATTTATCTTGGCATGAAGCTTGGTACTTGGCAAGGACCAGAGCAAATATTAC	1800
Porcine_morbillivirus_Swine_Mexico	GGATGATGAGAAATCTTGGATGAGGCATGGCAGCTGGCCAAACAGAGAGCTAATATTAC	1800
Dolphin	TGATGACGACCAGTCATGGCATGAGGCATGGACTCTAGCGAGGCAGAGAGCTAATATTAC	1800
Pilot_Whale_CEMV	AGATGACGAGCAATCATGGCGGAAGCATGGATTCTAGCGAGACAAAGAGCTAATGTGAC	1800
Canine_CDV	TGATGATGACGAATCTTGGCAAGAGGCTTGGACCTTGGCAAAACAGAGAGCGGACATCTC	1800
Ferret_Australia_CDV	TGATGATGACGAATCTTGGCAAGAGGCTTGGACCTTGGCAAAACAGAGAGCGGAACATCTC	1800
	Harbourseal_Netherlands_WaddenSeal_PDV	
	TGATGATGATAGCTCATGGCAAGAAGCGTGGACTCTGGCAAAACAGAGAGCCAATATATC	1800
	GreySeal_Massachusetts_PhocineMorbillivirus	
	TGATGATGATAGCTCATGGCAAGAAGCGTGGACTCTGGCAAAACAGAGGGCCAATATATC	1800
Harp_Seal_Canada_PhocineMorbillivirus	TGATGATGATAGCTCATGGCAAGAAGCGTGGACTCTGGCAAAACAGAGGGCCAATATATC	1800
Siberian_Ibex_PPRV	GGATGATGAGAAATCATGGAGTGAAGCCTGGATGCTAGCTAGGCAGAGAGCCAATATCAC	1800
Goitered_gazelle_PPRV_Mongolia	GGATGATGAGAAATCATGGAGTGAAGCCTGGATGCTAGCTAGGCAGAGAGCCAATATCAC	1800
SaigaPPRV	GGATGATGAGAAATCATGGAGTGAAGCCTGGATGCTAGCTAGGCAGAGAGCCAATATCAC	1800
Bharal_Tibet_PPRV	GGATGATGAGAAATCATGGAGTGAAGCCTGGATGCTAGCTAGGCAGAGAGCCAATATCAC	1800
Ovis_aries_PPRV	GGATGATGAGAAATCATGGGTTGAAGCCTGGATGCTAGCTAGGCAGAGAGCCAATATCAC	1800
nubian_ibex_PPRV	GGATGATGAGAAATCATGGAGTGAAGCCTGGATGCTAGCTAGGCAGAGAGCCAATATCAC	1800
Measles_virus	TGATGATGATAGCTCTTGGAAACGAAGCCTGGTGTGGCAAGGCAAAAGGCCAATGTGAG	1800
Cattle_Rinderpest	AGATGACGACAAATCATGGAATGAAGCTTTAAACTAGCACAGCAGAGGGCAAAAGTGAG	1800
Giraffe_Kenya_Rinderpest	AGATGACGACAAATCATGGAATGAAGCCTTTAAACTAGCACAGCAGAGGGCAAAAGTGAG	1800

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Hendra	TATAGATGTGTTAAAAAGCTATAA	CTCTGCTCAAACTTCCAACAATCTATCTCACAGACT	1860
Nipah_Virus	CTTAGATGTATTGAAAGCTATAACCC	AGTTTCCACTTCAAACAATTTATCCCATAGATT	1860
FelisCatus_Hongkong_FeMV	TTTTGACGAACTCAAATTAATAACAC	CTATAGCTACATCTACAAATTTAGCACATAGATT	1860
FelisCatus_Switzerland_FeMV	CTTTGATGAGCTCAAATTGATAACAC	CTATAGCTACATCTACGAATTTAGCACATAGATT	1860
Porcine_morbillivirus_Swine_Mexico	ACTCGAGGAGCTCAGGATGATTACAC	CTGTATCAACATCCACGAATCTGGCCCCACAGGCT	1860
Dolphin	CTTAGAGGAGTTAAGGATGATTACCCC	AATATCGACATCCACCAATTTGGGCTCATCGATT	1860
Pilot_Whale_CEMV	CTTAGAGGAATTAAGAATGATTACTCC	AATATCGACATCTACCAACCTAGCCCATCGGTT	1860
Canine_CDV	ACTTGAGGAATTACGAATGATTACCCC	AATTTCCACTTCTACTAATCTAGCTCACC	1860
Ferret_Australia_CDV	ACTTGAGGAATTACGGATGATTACCCC	AATTTCCACTTCTACTAATCTAGCTCACC	1860
Harbourseal_Netherlands_WaddenSeal_PDV	TCTTGAAGAGCTCAGGATGATTACTC	CTATTTCTACTTCTACAAATTTAGCTCACC	1860
GreySeal_Massachusetts_PhocineMorbillivirus	TCTTGAAGAGCTCAGGATGATTACTC	CTATTTCTACTTCTACAAATTTAGCTCACC	1860
Harp_Seal_Canada_PhocineMorbillivirus	TCTTGAAGAGCTCAGGATGATTACTC	CTATTTCTACTTCTACAAATTTAGCTCACC	1860
Siberian_Ibex_PPRV	CTTAGATGAATTGAGAATGATCACTCC	AGTCTCCACATCCACCAACTTAGCCACCGGTT	1860
Goitered_gazelle_PPRV_Mongolia	CTTAGATGAATTGAGAATGATCACTCC	AGTCTCCACATCCACCAACTTAGCCACCGGTT	1860
SaigaPPRV	CTTAGATGAATTGAGAATGATCACTCC	AGTCTCCACATCCACCAACTTAGCCACCGGTT	1860
Bharal_Tibet_PPRV	CTTAGATGAATTGAGAATGATAA	CTCAGTCTCTACATCCACCAACCTAGCCACCGGTT	1860
Ovis_aries_PPRV	CTTAGATGAATTGAGAATGATCACTCC	AGTCTCTACATCCACCAACCTAGCCACCGGTT	1860
nubian_ibex_PPRV	CTTAGATGAATTGAGAATGATTACTCC	AGTCTCTACATCCACCAACCTAGCCACCGGTT	1860
Measles_virus	CCTGGAGGAGCTAAGGGTGATCACTCC	CAATCTCGACTTTCGACTAATTTAGCGCATAGGTT	1860
Cattle_Rinderpest	CCTGGAGGAATTAATAATGATACTCCA	ATTTCAACATCCACCAACCTAGCACATAGACT	1860
Giraffe_Kenya_Rinderpest	CCTGGAGGAATTAATAATGATAACCC	CAATTTCAACATCCACCAACCTCGCACATAGACT	1860

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Hendra	CAGAGATAGATCTACACAGTTCAAGTTGCC	AGGTAGTGTCTTAATAGGGTTTCTAGATA	1920	
Nipah_Virus	GAGAGATAAATCCACACAATTTAAGTTTG	CAGGGAGTGTA	CTCAACAGAGTTTCTAGATA	1920
FelisCatus_Hongkong_FeMV	GAGAGATAGAAGCACTCAAGTTAAATATT	CAGGAACCTCTTTAGTAAGAGTGGCACGCTA	1920	
FelisCatus_Switzerland_FeMV	AAGAGATAGGAGTACCCAAGTCAAATATT	CAGGAACCTCTTTAGTAAGAGTAGCACGCTA	1920	
Porcine_morbillivirus_Swine_Mexico	GAGGGATAAGAGCACCCAAGTCAAGTACT	CCGGGACATCATTGATTTCGAGTGGCAAGGTA	1920	
Dolphin	GAGGGATCGTAACACTCAGGTAAAGTACT	CAGGTACATCGTTAATCCGAGTAGCGAGGTA	1920	
Pilot_Whale_CEMV	GAGGGACCGTAACACTCAAGTCAAGTATT	CAGGTACTTTCGTTGATCCGGGTAGCAAGATA	1920	
Canine_CDV	AAGAGACAAGAGTACTCAAGTCAAATACT	CAGGGACCTCTCTCATCAGAGTAGCACGTTA	1920	
Ferret_Australia_CDV	AAGAGACAAGAGTACTCAAGTCAAATACT	CAGGGACCTCTCTCATCAGAGTAGCACGTTA	1920	
Harbourseal_Netherlands_WaddenSeal_PDV	AAGAGACAAAAGCACACAAGTCAAATACT	CAGGTACCTCTCTTATTAGGGTCGCACGTTA	1920	
GreySeal_Massachusetts_PhocineMorbillivirus	AAGAGACAAAAGCACACAAGTCAAATACT	CAGGTACCTCTCTGATTAGGGTCGCACGTTA	1920	
Harp_Seal_Canada_PhocineMorbillivirus	AAGAGACAAAAGCACACAAGTCAAATACT	CAGGTACCTCTCTGATTAGGGTCGCACGTTA	1920	
Siberian_Ibex_PPRV	GAGGGATCGGAGTACCCAGGTGAAGTACT	CGGGGACATCCCTTGTGAGGGTTGCAAGATA	1920	
Goitered_gazelle_PPRV_Mongolia	GAGGGATCGGAGTACCCAGGTGAAGTACT	CGGGGACATCCCTTGTGAGGGTTGCAAGATA	1920	
SaigaPPRV	GAGGGATCGGAGTACCCAGGTGAAGTACT	CGGGGACATCCCTTGTGAGGGTTGCAAGATA	1920	
Bharal_Tibet_PPRV	GAGGGATCGGAGTACCCAGGTGAAGTACT	CGGGGACATCCCTTGTGAGGGTTGCAAGATA	1920	
Ovis_aries_PPRV	GAGGGATCGGAGTACCCAGGTGAAGTACT	CGGGGACATCCCTTGTGAGGGTTGCAAGATA	1920	
nubian_ibex_PPRV	GAGGGATCGGAGTACCCAGGTGAAGTACT	CGGGGACATCCCTTGTGAGGGTTGCAAGATA	1920	
Measles_virus	GAGGGATCGTAGCACTCAAGTGAATACT	CAGGTACATCCCTTGTCCGAGTGGCAAGGTA	1920	
Cattle_Rinderpest	CAGGGATCGGAGTACCCAAGTTAAGTACT	TGGGACATCTTTGGTCAGAGTGGCTCGGTA	1920	
Giraffe_Kenya_Rinderpest	TAGGGATCGGAGTACCAAGTTAAGTACT	CAGGGACGTCCTTTGGTCAGAGTAGCTCGGTA	1920	

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Hendra	TGTCAACATAAGTAATGATAATTTAGACTT	CAGAGTGGAAGGTGAAAAGGTCGACACCAA	1980
Nipah_Virus	TGTTAACATAAGCAATGACAATCTAGATTT	CAGAATTGAGGGAGAAAAGGTAGATACGAA	1980
FelisCatus_Hongkong_FeMV	TACAACAATATCTAATGATAATATGTCGTT	CATTATTAATAACAAAAAGTCGATACTAA	1980
FelisCatus_Switzerland_FeMV	TACAACAATTTCCAATGATAATATGTCGTT	CATTATTAACAACAAGAAGGTAGATACTAA	1980
Porcine_morbillivirus_Swine_Mexico	TACTACCATTTCTAATGATAATCTCTCTTT	CACGATTGCTGAGAAAAAAGTAGACACCAA	1980
Dolphin	TACAACAATATCGAATGATAACTTATCATT	CATTATAGCAGATAAGAAGGTGGATACAAA	1980
Pilot_Whale_CEMV	TACAACAATATCAAATGATAATTTATCATT	CGTTATAGCAGACAAGAAGGTGGATACAAA	1980
Canine_CDV	TGCAACTATCTCGAATGATAATCTTTCTTTT	TATTATAGATGACAAGAAAGTGGACACAAA	1980
Ferret_Australia_CDV	TGCAACTATCTCGAATGATAATCTTTCTTTT	TATTATAGATGACAAGAAAGTGGACACAAA	1980
Harbourseal_Netherlands_WaddenSeal_PDV	TACAACTATCTCGAATGATAATCTCTCATTT	TGTAATTGCTGACAAAAAAGTGGACACAAA	1980
GreySeal_Massachusetts_PhocineMorbillivirus	TACAACTATTTCTCGAATGATAATCTCTCATTT	TGTAATTGCTGACAAAAAAGTGGACACAAA	1980
Harp_Seal_Canada_PhocineMorbillivirus	TACAACTATTTCTCGAATGATAATCTCTCATTT	TGTAATTGCTGACAAAAAAGTGGACACAAA	1980
Siberian_Ibex_PPRV	CACAACCATCTCGAATGATAACTTGTGCTTT	TGTGATATCTGAGAAAAAAGTGGATACCAA	1980
Goitered_gazelle_PPRV_Mongolia	CACAACCATCTCCAATGATAACTTGTGCTTT	TGTGATATCTGAGAAAAAAGTGGATACCAA	1980

SaigaPPRV	CACAACCATCTCCAATGATAACTTGTGCTTTGTGATATCTGAGAAAAAAGTGGATACCAA	1980
Bharal_Tibet_PPRV	CACAACCATCTCCAATGATAACTTGTGCTTTGTGATATCTGAGAAAAAAGTGGATACCAA	1980
Ovis_aries_PPRV	CACAACCATCTCCAATGATAACCTGTCAITTTGTGATATCTGAGAAAAAAGTGGATACCAA	1980
nubian_ibex_PPRV	CACAACCATCTCCAATGATAACCTGTCAITTTGTGATATCTGAGAAAAAAGTGGACACCAA	1980
Measles_virus	TACCACAATCTCCAACGACAATCTCTCATTTGTGCATATCAGATAAGAAGGTTGATACTAA	1980
Cattle_Rinderpest	TACAACAATATCAAATGATAACCTATCTTTGTCTATCTCGGATAAGAAAGTAGATACAAA	1980
Giraffe_Kenya_Rinderpest	TACAACAATATCAAATGATAACCTATCTTTGTCAITTTGATATAAGAAAGTAGATACAAA	1980
	* * * * *	
Hendra	TCTAATATACCAACAAACAATGCTACTCGGCTTGTGCTAGTATTGGAAGGTAAATTTCCGGTT	2040
Nipah_Virus	TCTTATTTATCAACAAGCAATGCTATTAGGGTTATCGGTATTGGAAGGTAAATTCAGATT	2040
FelisCatus_Hongkong_FeMV	TTTTGTCTACCAGCAAGGAATGTTATTAGGTTTGAGTATATTAGAATATATATTTCAGATA	2040
FelisCatus_Switzerland_FeMV	CTTTGTCTATCAGCAAGGCATGTTGTTAGGCCTGAGTATACATAGAGTACATATTAGATA	2040
Porcine_morbillivirus_Swine_Mexico	CTTTATATATCAACAAGGGATGCTTCTCGGCTTAGGGATCCTCGAGCACCTATTTCCGCT	2040
Dolphin	TTTCATTTATCAGCAAGGAATGTTGTTGGGATTGGGAATCCTAGAAACATATTTTCAGGTT	2040
Pilot_Whale_CEMV	TTTTATTTATCAGCAAGGGATGCTGTTAGGATTGGGAGTTCTAGAAACGTTTTTCAGGTT	2040
Canine_CDV	TTTTATTTATCAACAAGGTATGCTCTCGGCTGGGGATCCTTGAGCACTTATTTAGATT	2040
Ferret_Australia_CDV	TTTTATTTATCAGCAAGGGATGCTCTCGGCTGGGGATCCTTGAGCACTTATTTAGATT	2040
Harbourseal_Netherlands_WaddenSeal_PDV	TTTCATCTATCAGCAAGGTATGCTCTTGGGTCTTGGCATCTTAGAACATCATTTTCAGATT	2040
GreySeal_Massachusetts_PhocineMorbillivirus	TTTCATCTATCAGCAAGGTATGCTCTTGGGTCTTGGCATCTTAGAACATCATTTTCAGATT	2040
Harp_Seal_Canada_PhocineMorbillivirus	TTTCATCTATCAGCAAGGTATGCTCTTGGGTCTTGGCATCTTAGAACATCATTTTCAGATT	2040
Siberian_ibex_PPRV	CTTCATTTATCAGCAAGGGATGTTGCTTGGTCTTGGGATCCTTGAGAACCTCTTTAGGCT	2040
Goitered_gazelle_PPRV_Mongolia	CTTCATTTATCAGCAAGGGATGTTGCTTGGTCTTGGGATCCTTGAGAACCTCTTTAGGCT	2040
SaigaPPRV	CTTCATTTATCAGCAAGGGATGTTGCTTGGTCTTGGGATCCTTGAGAACCTCTTTAGGCT	2040
Bharal_Tibet_PPRV	CTTCATTTATCAGCAAGGGATGTTGCTTGGTCTTGGGATCCTTGAGAACCTCTTTAGGCT	2040
Ovis_aries_PPRV	CTTCATTTATCAGCAAGGGATGCTGCTCGGTCTTGGGATCCTTGAGAACCTCTTTAGGCT	2040
nubian_ibex_PPRV	CTTCATTTATCAGCAAGGGATGCTGCTCGGTCTTGGGATCCTTGAGAACCTCTTTAGGCT	2040
Measles_virus	CTTTATATACCAACAAGGAATGCTTCTAGGGTTGGGTGTTTTAGAAACATTGTTTCGACT	2040
Cattle_Rinderpest	CTTCATCTATCAGCAAGGGATGTTACTAGGTTTGGGTGTCCTCGAGACATTGTTTAGGCT	2040
Giraffe_Kenya_Rinderpest	TTTCATCTACCAGCAGGGGATGTTATTAGGTTTAGTGTACTCGAGACATTGTTTAGGCT	2040
	* * * * *	
Hendra	GAGAACAGAAACAGATGATTATAACGGAATATATCATCTGCATGTCAGAGATAATTGTTG	2100
Nipah_Virus	GAGATTAGAAACTGATGATTACAACGGGATATATCACTTACACGTAAAGGATAATTGTTG	2100
FelisCatus_Hongkong_FeMV	CTGTACAAGTACTGGACAGTCAAACACTGTAATTCACCTTACATGCAGATGTTAATTGTTG	2100
FelisCatus_Switzerland_FeMV	TTGTACAAGTACTGGACAATCAAACACTGTAATTCACCTTACATGCAGACATCAATTGTTG	2100
Porcine_morbillivirus_Swine_Mexico	GGTTGATAACACAGGGGCTGCAAACACAGTCCTCCATTTACATGTAGAGACTGAGTGCTG	2100
Dolphin	ACAGACAAATACGGGGTCTCTAATACAGTGTTACATCTACATGTTGAAGCAGAATGCTG	2100
Pilot_Whale_CEMV	ACATACAAACACGGGGTCTCTCAATACAGTGTTACATTTACATGTTGAAACAGAATGCTG	2100
Canine_CDV	GTCTTCAACCACCGGCGACTCTAACACCGTGTTACATTTACATGTTGAAACAGATTGTTG	2100
Ferret_Australia_CDV	GTCTTCAACCACCGGCGACTCTAACACCGTGTTACATTTACATGTTGAAACAGATTGTTG	2100
Harbourseal_Netherlands_WaddenSeal_PDV	GTCTCTAAATACCGGTGAATCTAACACTGTACTGCATCTGCACGTTGAAACAGACTGTTG	2100
GreySeal_Massachusetts_PhocineMorbillivirus	GTCTCTAAATACCGGTGAATCTAACACTGTACTGCATCTGCACGTTGAAACAGACTGTTG	2100
Harp_Seal_Canada_PhocineMorbillivirus	GTCTCTAAATACCGGTGAATCTAACACTGTACTGCATCTGCACGTTGAAACAGACTGTTG	2100
Siberian_ibex_PPRV	AGAGGCCACCACCGGAGTATCCAACACAGTGCTACACCTGCACGTGGAACAGAAATGTTG	2100
Goitered_gazelle_PPRV_Mongolia	AGAGGCCACCACCGGAGTATCCAACACAGTGCTACACCTGCACGTGGAACAGAAATGTTG	2100
SaigaPPRV	AGAGGCCACCACCGGAGTATCCAACACAGTGCTACACCTGCACGTGGAACAGAAATGTTG	2100
Bharal_Tibet_PPRV	AGAGGCCACCACCGGAGTATCCAACACAGTGCTACACCTGCACGTGGAACAGAAATGTTG	2100
Ovis_aries_PPRV	AGAGGCCACCACCGGAGTATCCAACACAGTGCTACACCTGCACGTGGAACAGAAATGTTG	2100
nubian_ibex_PPRV	AGAGGCCACCACCGGAGTATCCAACACAGTGCTACACCTGCACGTGGAACAGAGTGTTG	2100
Measles_virus	CGAGAAAGATACTGGATCATCTAACACGGTATTACATCTTCACGTGGAACAGATTGTTG	2100
Cattle_Rinderpest	TGATAAAGACACAGGACCCTCAAACACTGTACTGCACCTCCATGTAGAAACAGATTGCTG	2100
Giraffe_Kenya_Rinderpest	TGATAAAGACACAGGGCCCTCAAATACTGTACTGCACCTCCATGTAGAAACAGATTGTTG	2100
	* * * * *	
Hendra	TGTCAAGGAGGTTGCTGATATTGGTGGTGTTAATGCTGAGCTACCTGTCCCAGAATACAC	2160
Nipah_Virus	TGTCAAAGAAGTGGCTGATGTAGGCCAAGTAGACGCTGAGTTGCCTATCCCAGAATATAC	2160
FelisCatus_Hongkong_FeMV	TATAGTACAGATGACTGATCAGCCCTTATACACCAAGCTTAACAAAAAGCTACCTGATAT	2160
FelisCatus_Switzerland_FeMV	TATAGTACAGATGACTGATCAGCCCTTATACACCAAGTTTAACAAAGAAGCTACCTGATAT	2160
Porcine_morbillivirus_Swine_Mexico	TGTCATCCCCATGACCGACTATCCGAGTGTTACCAAGTCTCCGCCAACTTCGGCAGTCCCA	2160
Dolphin	TGTAATCCCTATGACTGACCATCCCAGAGTCCCAAGTACCGTACTGCACCTAGCGCCAG	2160
Pilot_Whale_CEMV	TGTAATCCCTATGACTGACCATCCTAGGGTCCGAGTACCCATACTGCACCTAGAGCTAG	2160
Canine_CDV	CGTAATACCCATGAGTGACCATCCAAGAGTCCCAGGGCTCAGAAAGGTCGTCATACCAAG	2160
Ferret_Australia_CDV	CGTAATACCCATGAGTGACCATCCAAGAGTCCCAGGGCTCAGAAAGGTCGTCATACCAAG	2160

	Harbourseal_Netherlands_WaddenSeal_PDV	
	TGTGATCCCCATGACTGATCATCCACGAGTCTAGCCCTTAGACAGGTTGTTGTACCAAG	2160
	GreySeal_Massachusetts_PhocineMorbillivirus	
	TGTGATCCCCATGACTGATCATCCACGAGTCTAGCCCTTAGACAGGTTGTTGTACCAAG	2160
Harp_Seal_Canada_PhocineMorbillivirus	TGTGATCCCCATGACTGATCATCCACGAGTCTAGCCCTTAGACAGGTTGTTGTACCAAG	
	2160	
Siberian_Ibex_PPRV	TGTTGTACCTATGGTGGATCACCCAAGGATACCGAGTCTCCGTAATATAAAAAGTTACGGA	2160
Goitered_gazelle_PPRV_Mongolia	TGTTGTACCTATGGTGGATCACCCAAGGATACCGAGTCTCCGTAATATAAAAAGTTACGGA	
	2160	
SaigaPPRV	TGTTGTACCTATGGTGGATCACCCAAGGATACCGAGTCTCCGTAATATAAAAAGTTACGGA	2160
Bharal_Tibet_PPRV	TGTTGTACCTATGGTGGATCACCCAAGGATACCGAGTCTCCGTAATATAAAAAGTTACGGA	2160
Ovis_aries_PPRV	TGTTGTACCTATGGTGGATCACCCAAGGATACCGAGTCTCCGTAATATAAAAAGTTACGGA	2160
nubian_ibex_PPRV	TGTTGTACCTATGGTGGATCACCCAAGGATACCGAGTCTCCGTAATATAAAAAGTTACGGA	2160
Measles_virus	CGTGATCCCGATGATAGATCATCCCAGGATACCCAGCTCCCGCAAGCTAGAGCTGAGGGC	2160
Cattle_Rinderpest	CGTGATCCCTATGGTAGATCACCCGAGGATCCCAAGCTTGCATGAATTGAAGTTCAGAAG	2160
Giraffe_Kenya_Rinderpest	CGTGATTCCTATGGTAGATCACCCGAGGATCCCAAGCCTGCATGAATTGAACCTTCAAAG	2160
	* * *	
Hendra	TGAAGTAGAAAATAATAGGCTCATATATGACCCAGATCCTGTTTCTGAAATTGATTGTGA	2220
Nipah_Virus	TGAAGTGATAACAATCATCTTATATATGATCCAGACCCCGTTTCAGAAATAGATTGCAG	2220
FelisCatus_Hongkong_FeMV	TAGGCCCATTAATAATAAACTGATATATGATCCGGCTCTATAATCGATACCGATGCAGC	2220
FelisCatus_Switzerland_FeMV	TAAACCTATCAATAATAAATTGATATATGATCCGGCTCTATAATTGATACTGATGCAGC	2220
Porcine_morbillivirus_Swine_Mexico	AACAGTTGTACAAACCCTCTGATCTATGATAAGACCCCTATAATTGAAAAGGATGCAAT	
	2220	
Dolphin	GAAAATGTGCACCAATCCATTGATCTACGATAATTCTCCAATCATTGAGAAGGATGCGGT	2220
Pilot_Whale_CEMV	GAAAGCTTGTACTAATCCGTTAATTTACGATAATTCTCCAATTATCGAGAAGGATGCAGT	2220
Canine_CDV	AAATATTTGTACAAATCCTTTGATTTATGACAGTAACCCTATTATTGAGAAAGATGCAGT	2220
Ferret_Australia_CDV	AAATGTTTGTACAAATCCTTTGATTTATGACAGTAACCCTATTATTGAGAAAGATGCAGT	2220
Harbourseal_Netherlands_WaddenSeal_PDV	GAATATCTGCACAAATCCCTTGATTTATGATAGTAACCCTATTATAGAGAAAGATGCAAT	
	2220	
GreySeal_Massachusetts_PhocineMorbillivirus	GAATATCTGCACAAATCCCTTGATCTATGATAGTAACCCTATTATAGAGAAAGATGCAAT	
	2220	
Harp_Seal_Canada_PhocineMorbillivirus	GAATATCTGCACAAATCCCTTGATCTATGATAGTAACCCTATTATAGAGAAAGATGCAAT	
	2220	
Siberian_Ibex_PPRV	TGAGCTATGCACAAACCCTTTGATCTACGACAGGTCCCCCATCATAGAGCACGATGCAAC	2220
Goitered_gazelle_PPRV_Mongolia	TGAGCTATGCACAAACCCTTTGATCTACGACAGGTCCCCCATCATAGAGCACGATGCAAC	
	2220	
SaigaPPRV	TGAGCTATGCACAAACCCTTTGATCTACGACAGGTCCCCCATCATAGAGCACGATGCAAC	2220
Bharal_Tibet_PPRV	TGAGCTATGCACAAACCCTTTGATCTACGACAGGTCTCCCATCATAGAGCACGATGCAAC	2220
Ovis_aries_PPRV	TGAGCTATGCACAAACCCTTTGATCTACGACAGGTCTCCCATCATAGAGCACGATGCAAC	2220
nubian_ibex_PPRV	TGAGTTATGCACAAACCCTTTGATCTACGACAGATCTCCCATCATAGAGCACGATGCAAC	2220
Measles_virus	AGAGCTATGTACCAACCCATTGATATATGATAATGCACCTTTAATTGACAGAGATGCAAC	2220
Cattle_Rinderpest	GGAGCTATGTACCAACCCACTGATTATGATAGTGCACCCATCATCGACAGGGAAGCAAC	2220
Giraffe_Kenya_Rinderpest	GGAACCTATGTACCAACCCACTGATTATGATAGTGTCTCCCATCATCGACAGGGAAGCAAC	2220
	* * * * *	
Hendra	TCGCTTATCAAAGCAAGAGTCTAAGGCGAGAGAATTAGACTTTCTCTTTGGTCCACCGA	2280
Nipah_Virus	CCGTCTTTCTAATCAGGAGTCCAAATCAAGAGAATTAGACTTTCTTTTATGGTCAACTGA	2280
FelisCatus_Hongkong_FeMV	TAGGCTATATCCCAAAAATACCTGTACATTTAATAGATTTCCCAAGTTGGTCAACTAC	2280
FelisCatus_Switzerland_FeMV	TAGATTATATTCTCAAAAGTACCTATCACATCTAATAGATTTCCCAAGTTGGTCAACTAC	2280
Porcine_morbillivirus_Swine_Mexico	CAGGATTTACAATCAACACCACCGCGCCAGGTTGTAGAGTTTGTACATGGTCCACAAA	
	2280	
Dolphin	ACGTCTATATTTCCAGAGCCATAGAAAGCACTCGTGGAGTTTGTACTTGGTCAACGGG	2280
Pilot_Whale_CEMV	ACGTCTCTATTCTCAGAGCCATAGGAAACATCTGTGGAGTTTGTACTTGGTCAACGGG	2280
Canine_CDV	CAGACTTTATAACCAGAGTCACAGAAAGCACATTGTAGAGTTTGTACATGGACAACAGG	2280
Ferret_Australia_CDV	CAGACTTTATAACCAGAGTCACAGAAAGCACATTGTAGAGTTTGTACATGGACAACAGG	2280
	Harbourseal_Netherlands_WaddenSeal_PDV	
	AAGGCTTTATAATCAAAGTCATCGGAAGCATATTGTAGAGTTTGTACCTGGACAACAGG	2280
	GreySeal_Massachusetts_PhocineMorbillivirus	
	AAGGCTTTATAATCAAAGTCATCGGAAGCATATTGTAGAGTTTGTACCTGGACAACAGG	2280
Harp_Seal_Canada_PhocineMorbillivirus	AAGGCTTTATAATCAAAGTCATCGGAAGCATATTGTAGAGTTTGTACCTGGACAACAGG	
	2280	
Siberian_Ibex_PPRV	CCGGCTATATTACAGAGCCACAGGAGACATTTGGTGGAGTTTGTACCTGGTCAACAAG	2280
Goitered_gazelle_PPRV_Mongolia	CCGGCTATATTACAGAGCCACAGGAGACATTTGGTGGAGTTTGTACCTGGTCAACAAG	
	2280	
SaigaPPRV	CCGGCTATATTACAGAGCCACAGGAGACATTTGGTGGAGTTTGTACCTGGTCAACAAG	2280
Bharal_Tibet_PPRV	CCGACTATACTACAGAGCCACAGGAGACATTTGGTGGAGTTTGTACCTGGTCCACAAG	2280
Ovis_aries_PPRV	CCGACTATACTACAGAGCCACAGGAGACATCTGGTGGAGTTTGTACCTGGTCAACAAG	2280
nubian_ibex_PPRV	CCGACTATACTACAGAGCCACAGGAGACATCTGGTGGAGTTTGTACCTGGTCAACAAG	2280
Measles_virus	AAGGCTATACACCCAGGCCATAGAGGCACCTTGTGGAATTTGTACATGGTCCACACC	2280
Cattle_Rinderpest	AAAACCTCTATACCCAAAGTCATCGGAGACATCTCGTGGAAATTTGTACATGGTCTACATC	2280
Giraffe_Kenya_Rinderpest	AAAACCTTTATACCCAGAGTCATCGAAGGCACCTCGTGGAAATTTGTACATGGTCTACATC	2280
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Hendra	AGAACTCCATGATGTGTTAGCTAAGACTGTGGCTCAAACAGTTCTCGAGATCATAACTAA	2340
Nipah_Virus	GGAACCTTCATGATGTCCTAGCTAAGACTGTTGCTCAGACCGTTCTTGAGATTATAACAAA	2340
FelisCatus_Hongkong_FeMV	TCAGCTTAACACAGTGTGGCGAAAGTGGTGGCGGTATCCATTGTAGAATTAATTACAAA	
	2340	



FelisCatus_Switzerland_FeMV	TCAGCTTAACACAGTATTGGCAAAAGTGGTGGCAGTATCGATTGTGGAATTAATAACAAA	
	2340	
Porcine_morbillivirus_Swine_Mexico	TCAGCTGTATCACGTGTTAGCCAAATCTACTGCCATGTCTATGATTGAACTCGTAACTAA	
	2340	
Dolphin	GCAGCTGTATCACGTACTAGCGAAATCAACTGCTATGTCAATGATCGAATTGGTTACCAA	2340
Pilot_Whale_CEMV	ACAATTGTACCACGTACTAGCGAAGTCTACTGCTATGTCAATGATTGAATTGGTCACAAA	2340
Canine_CDV	GCAGCTTTATCATGTGCTAGCTAAATCTACTGCTATGTCTATGGTTGAGATGATTACAAA	2340
Ferret_Australia_CDV	GCAGCTTTATCATGTGCTAGCTAAATCTACTGCTATGTCTATGGTTGAGATGATTACAAA	2340
	Harbourseal_Netherlands_WaddenSeal_PDV	
	GCAACTCTATCATGTGCTCGCTAAGTCGACCGCTATGTCTATGGTCGAAATGATTACAAA	2340
GreySeal_Massachusetts_PhocineMorbillivirus	GCAACTCTATCATGTGCTCGCTAAGTCGACCGCTATGTCTATGGTCGAAATGATTACAAA	
	2340	
Harp_Seal_Canada_PhocineMorbillivirus	GCAACTCTATCATGTGCTCGCTAAGTCGACCGCTATGTCTATGGTCGAAATGATTACAAA	
	2340	
Siberian_Ibex_PPRV	CCAGCTTTACCATATACTGGCTAAGTCTACAGCAATGTCCATGATTGAATTGATTACGAG	2340
Goitered_gazelle_PPRV_Mongolia	CCAGCTTTACCATATACTGGCTAAGTCTACAGCAATGTCCATGATTGAATTGATTACGAG	
	2340	
SaigaPPRV	CCAGCTTTACCATATACTGGCTAAGTCTACAGCAATGTCCATGATTGAATTGATTACGAG	2340
Bharal_Tibet_PPRV	CCAGCTTTACCATATACTGGCTAAGTCTACAGCAATGTCCATGATTGAATTGATTACGAG	2340
Ovis_aries_PPRV	CCAGCTTTACCATATACTGGCTAAGTCTACAGCAATGTCCATGATTGAGTTGATCAGGAG	2340
nubian_ibex_PPRV	CCAGCTTTACCATATACTGGCTAAGTCTACAGCAATGTCCATGATTGAGTTGATCAGGAG	2340
Measles_virus	CCAACTATATCACATCTAGCTAAGTCCACAGCACTATCTATGATTGACCTGGTAACAAA	2340
Cattle_Rinderpest	TCAGTTGTACCACATCTTGGCAAAATCAACTGCATTGTGCGATAGAGACTTAGTGACAAA	2340
Giraffe_Kenya_Rinderpest	CCAGTTGTACCACATATTTGGCAAAATCAACTGCATTGTGCGATAGAGACTTAGTGACAAA	2340
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Hendra	AGCCGATAAAGATGTCCTCAAGCAACACTTAGCTATAGACTCAGATGACAGTATCAATAG	2400
Nipah_Virus	GGCTGACAAGGATGTTTTAAAGCAACACCTTGCAATAGACTCTGACGATAACATCAACAG	2400
FelisCatus_Hongkong_FeMV	AGCTAGTAAAGACCATCTCAATGAGATAATAGCAGTTGTTGGTGATGATGATATCAATAG	
	2400	
FelisCatus_Switzerland_FeMV	GGCAAGTAAAGACCATCTTAATGAGATAATAGCAGTTGTTGGTGATGATGATATTAATAG	2400
Porcine_morbillivirus_Swine_Mexico	ATTTGAAAAGGATCACCTCAATGAGATCAGCAGCTTGATCGGGGATGATGATATCAATAG	
	2400	
Dolphin	ATTTGAGAAAGATCATCTGAACGAAATAGCTGCTTTAATAGGAGACGATGATATCAATAG	2400
Pilot_Whale_CEMV	ATTTGAGAAAGATCATCTGAATGAAATGCTGCTTTGATAGGAGATGATGATATCAACAG	2400
Canine_CDV	GTTTGAAAAGGACCATCTAAGTCAAGTCACTGCTTAAATTGGCGATGATGATATCAATAG	2400
Ferret_Australia_CDV	GTTTGAAAAGGACCATCTAAGTCAAGTCACTGCTTAAATTGGCGATGATGATATCAATAG	2400
	Harbourseal_Netherlands_WaddenSeal_PDV	
	ATTTGAAAAAGACCACCTTAATGAGGTCTCTGCACTGATTGGGGATGATGACATTAACAG	2400
	GreySeal_Massachusetts_PhocineMorbillivirus	
	ATTTGAAAAAGACCACCTTAATGAGGTCTCTGCACTGATTGGGGATGATGACATTAACAG	2400
Harp_Seal_Canada_PhocineMorbillivirus	ATTTGAAAAAGACCACCTTAATGAGGTCTCTGCACTGATTGGGGATGATGACATTAACAG	
	2400	
Siberian_Ibex_PPRV	ATTCGAGAAAGATCACATGAATGAAATAGCCGCCCTGATTGGCGATGACGACATCAACAG	2400
Goitered_gazelle_PPRV_Mongolia	ATTCGAGAAAGATCACATGAATGAAATAGCCGCCCTGATTGGCGATGACGACATCAACAG	
	2400	
SaigaPPRV	ATTCGAGAAAGATCACATGAATGAAATAGCCGCCCTGATTGGCGATGACGACATCAACAG	2400
Bharal_Tibet_PPRV	ATTCGAGAAAGATCACATGAATGAAATAGCCGCCCTGATTGGCGATGACGACATCAACAG	2400
Ovis_aries_PPRV	ATTCGAGAAAGATCACATGAATGAAATAGCCGCCCTGATTGGCGATGACGACATCAACAG	2400
nubian_ibex_PPRV	ATTCGAGAAAGATCACATGAATGAAATAGCCGCCCTGATTGGCGATGACGACATCAACAG	2400
Measles_virus	ATTTGAGAAGGACCATATGAATGAAATTCAGCTCTCATAGGGGATGACGATATCAATAG	2400
Cattle_Rinderpest	ATTCGAGAAAGATCATATGAACGAGGTATCTGCTCTGATAGGAGATGATGATATCAACAG	2400
Giraffe_Kenya_Rinderpest	ATTCGAGAAAGACCACATGAATGAGGTATCTGCCCTAATAGGAGATGACGACATCAACAG	2400
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Hendra	TCTTATAACAGAGTTTTTAATGGTGAGCTCTGAGCTTTTTGCCCCTTATTTAGGTCAATC	2460
Nipah_Virus	CTTAATCACAGAATTTCTAATGTGATCTGAACTGTTTGCACTTTATCTAGGACAATC	2460
FelisCatus_Hongkong_FeMV	CTTTATTACAGAATTTACTATTGTTGATCCACGCTGTTTACACTATATTTAGGCCAATA	2460
FelisCatus_Switzerland_FeMV	TTTTATTACGGAGTTTCTACTTGTGATCCACGCTCTGTTTACATTATATTTAGGCCAATA	2460
Porcine_morbillivirus_Swine_Mexico	CTTTATAACTGAGTTCTGCTTGTGCGAGCCTAGATTATTCGTTGTTTATTTAGGCCAGTG	
	2460	
Dolphin	TTTCATCACTGAATTCCTTCTAGTAGAGCCTAGACTATTTACAGTATACTTAGGCCAATG	2460
Pilot_Whale_CEMV	TTTTATCACTGAATTTCTTCTAGTTGAGCCTAGACTATTTACAGTATACTTAGGGCAATG	2460
Canine_CDV	TTTTATCACTGAGTTTCTTCTAGTTGAGCCTAGATTATTTACTGTATATCTAGGTCAATG	2460
Ferret_Australia_CDV	TTTTATCACTGAGTTTCTTCTAGTTGAGCCTAGATTATTTACTGTATATCTAGGTCAATG	2460
Harbourseal_Netherlands_WaddenSeal_PDV	TTTTATCACTGAATTTCTTCTTGGTTGAACCTAGATTATTCACCGTGATCTAGGTCAATG	
	2460	
GreySeal_Massachusetts_PhocineMorbillivirus	TTTTATCACTGAATTTCTTCTTGGTTGAACCTAGATTATTCACCGTGATCTAGGTCAATG	
	2460	
Harp_Seal_Canada_PhocineMorbillivirus	TTTTATCACTGAATTTCTTCTTGGTTGAACCTAGATTATTCACCGTGATCTAGGTCAATG	
	2460	
Siberian_Ibex_PPRV	CTTCATCACAGAATTTTTGCTAGTGGAGCCTAGATTATTTATAGTTTACCTTGGTCAGTG	2460
Goitered_gazelle_PPRV_Mongolia	CTTCATCACAGAATTTTTGCTAGTGGAGCCTAGATTATTTATAGTTTACCTTGGTCAGTG	
	2460	
SaigaPPRV	CTTCATCACAGAATTTTTGCTAGTGGAGCCTAGATTATTTATAGTTTACCTTGGTCAGTG	2460
Bharal_Tibet_PPRV	CTTCATCACAGAATTTTTGCTAGTGGAGCCTAGATTATTTATAGTTTACCTTGGTCAGTG	2460
Ovis_aries_PPRV	CTTCATCACAGAATTTTTGCTAGTAGAGCCTAGATTATTTATAGTTTACCTTGGTCAGTG	2460
nubian_ibex_PPRV	CTTCATCACAGAATTTTTGCTAGTAGAGCCTAGATTATTTATAGTTTACCTTGGTCAGTG	2460
Measles_virus	TTTCATAACTGAGTTTCTGCTTATAGAGCCAAGATTATTCACCATCTACTTGGGCCAGTG	2460

Cattle_Rinderpest	TTTTATAACAGAGTTCCTCCTTGTAGAGCCTAGACTGTTTACCGTCTACTTAGGTCAGTG	2460
Giraffe_Kenya_Rinderpest	TTTTATAACAGAGTTCCTCCTTGTAGAGCCTAGATTGTTTACCGTCTACTTAGGTCAGTG	2460
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Hendra	AATTTCACTCAAGTGGGCATTTGAAATCCATCATAGACGCCACATGGACGACATACAAT	2520
Nipah_Virus	TATATCAATAAAATGGGCCTTTGAAATTCATCATAGGCGTCTAGAGGAAGACATACTAT	2520
FelisCatus_Hongkong_FeMV	CACATCAATTACAATGGGCCTTTGAAATTCATTATCATAGACCAGTGGGTAATATACCAGAT	2520
FelisCatus_Switzerland_FeMV	TACATCATTACAATGGGCATATGAAGTTCATTACCATAGACCAGTAGGTAAGTATCAGAT	2520
Porcine_morbillivirus_Swine_Mexico	TGCAGCCCTTAATTGGGCCTTTGAGATCCACTTCCACCGCCCGATGGGTAAATATCAAAT	2520
Dolphin	TGCAGCTATTAATTGGGCCTTTGAGATACATTATCACCGTCTTCAGGCAAGTACCAAAT	2520
Pilot_Whale_CEMV	TGCAGCTATTAATTGGGCCTTTGAGATACATTATCACCGCCCTTCAGGCAAATACCAAAT	2520
Canine_CDV	TGCTGCAATCAACTGGGCCTTTGAAATTCATTATCACCGACCTTCTGGAAAGTACCAAAT	2520
Ferret_Australia_CDV	TGCTGCAATCAACTGGGCCTTTGAAATTCATTATCACCGACCTTCTGGAAAGTACCAAAT	2520
	Harbourseal_Netherlands_WaddenSeal_PDV	
	TGCAGCAATTAAGTGGGCTTTGAAATCCATTACCATCGACCTTCAGGTAAATATCAAAT	2520
GreySeal_Massachusetts_PhocineMorbillivirus	TGCAGCAATTAAGTGGGCTTTGAAATCCATTACCATCGACCTTCAGGTAAATATCAAAT	2520
Harp_Seal_Canada_PhocineMorbillivirus	TGCAGCAATTAAGTGGGCTTTGAAATCCATTACCATCGACCTTCAGGTAAATATCAAAT	2520
Siberian_Ibex_PPRV	TGCTGCCATCAATTGGGCCTTTGATATACATTATCATCGGCCCTCGGGCAAGTACCAGAT	2520
Goitered_gazelle_PPRV_Mongolia	TGCTGCCATCAATTGGGCCTTTGATATACATTATCATCGGCCCTCGGGCAAGTACCAGAT	2520
SaigaPPRV	TGCTGCCATCAATTGGGCCTTTGATATACATTATCATCGGCCCTCGGGCAAGTACCAGAT	2520
Bharal_Tibet_PPRV	TGCTGCCATCAATTGGGCCTTTGATATACATTATCATCGGCCCTCGGGCAAGTACCAGAT	2520
Ovis_aries_PPRV	TGCTGCCATCAATTGGGCCTTTGATATACATTATCATCGGCCCTCGGGCAAGTACCAGAT	2520
nubian_ibex_PPRV	TGCTGCCATCAATTGGGCCTTTGATATACATTATCATCGGCCCTCGGGCAAGTACCAGAT	2520
Measles_virus	TGCAGCCATCAATTGGGCATTTGATGTACATTATCATAGACCATCAGGGAATATCAGAT	2520
Cattle_Rinderpest	TACAGCTATAAATTGGGCATTTGACATTCATTACCATCGACCTTCAGGGAATATCAGAT	2520
Giraffe_Kenya_Rinderpest	CACAGCTATAAATTGGGCATTTGACATCCATTACCATCGACCTTTAGGGAATATCAGAT	2520
	*****	
Hendra	GGTAGATTGTTGTCTGATCTCATATCCAATACATCGAAACATACATACAAAGTCTTGTC	2580
Nipah_Virus	GGTCGACCTATTGTCAGATCTTGATCAAATACATCAAAGCACACTTACAAAGTGTGTGTC	2580
FelisCatus_Hongkong_FeMV	GGCTGAAGTGTTGCAATAATTGCTGTCAAGAGCTAGTAGAGGTATATTACGATATTGAC	2580
FelisCatus_Switzerland_FeMV	GGCCGAAGTGTTACATAATCTACTGTCAAGAGCTAGTCGAGGTATATTAGCGTATTGAC	2580
Porcine_morbillivirus_Swine_Mexico	GGGTGAATTATTGTTACCTTTCTAACTAGGATGAGCAAAGGGGTATTCAAGATTCTCAC	2580
Dolphin	GGGAGAGTTGCTCTTTCTTTTGTGTAGGATGAGTAAAGGTGTTTTTAAATCCTTAC	2580
Pilot_Whale_CEMV	GGGAGAGTTGCTCTTTCTTTTGTGTAGGATGAGTAAAGGTGTTTTTAAATACTCAC	2580
Canine_CDV	GGGTGAGTTGTTGTTCTCTTCTGAGTAGAATGAGTAAAGGAGTCTTCAAATTTTAC	2580
Ferret_Australia_CDV	GGGTGAGTTGTTGTTCTCTTCTGAGTAGAATGAGTAAAGGAGTCTTCAAATTTTAAAC	2580
	Harbourseal_Netherlands_WaddenSeal_PDV	
	GGGGGAATTGTTGTTTTCATTCTCAGCAGAATGAGTAAAGGTGCTTCAAATCTTAAAC	2580
	GreySeal_Massachusetts_PhocineMorbillivirus	
	GGGGGAATTGTTGTTTTCATTCTCAGCAGAATGAGTAAAGGCGTCTTCAAATCTTAAAC	2580
Harp_Seal_Canada_PhocineMorbillivirus	GGGGGAATTGTTGTTTTCATTCTCAGCAGAATGAGTAAAGGCGTCTTCAAATCTTAAAC	2580
Siberian_Ibex_PPRV	GGGGGAACCTTCTACTCTCTGCTCTCTCGGATGAGCAAAGGAGTATATAAGATCTTTAC	2580
Goitered_gazelle_PPRV_Mongolia	GGGGGAACCTTCTACTCTCTGCTCTCTCGGATGAGCAAAGGAGTATATAAGATCTTTAC	2580
SaigaPPRV	GGGGGAACCTTCTACTCTCTGCTCTCTCGGATGAGCAAAGGAGTATATAAGATCTTTAC	2580
Bharal_Tibet_PPRV	GGGGGAACCTCTCTACTCTTTGCTCTCTCGGATGAGCAAAGGAGTATATAAGATCTTAC	2580
Ovis_aries_PPRV	GGGGGAACCTCTCTACTCTCTGCTCTCTCGGATGAGCAAAGGAGTATATAAGATCTTAC	2580
nubian_ibex_PPRV	GGGGGAACCTCTCTACTCTCTGCTCTCTCGGATGAGCAAAGGAGTATATAAGATCTTAC	2580
Measles_virus	GGGTGAGCTGTTGTCTTCTGTTCTTTCTAGAATGAGCAAAGGAGTGTAAAGGTGCTTGT	2580
Cattle_Rinderpest	GGGGGAACCTCTGACCTCATTCCTTGCAAGGATGAGTAAAGAGCGTATTCAAGGTCTTTGT	2580
Giraffe_Kenya_Rinderpest	GGGAGAACCTCTGACCTCATTCCTTGCAAGGATGAGTAAAGAGCGTATTCAAGGTCTTTGT	2580
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Hendra	TAATGCACTGTCCATCCAGAGTGTCAAGAGGTTTGTGAATTGCGGCTTGCTTCTTCC	2640
Nipah_Virus	AAATGCCTTGTACATCCTAGAGTATTCAAGAGATTTGTAAACTGTGGCTTGCTATTGCC	2640
FelisCatus_Hongkong_FeMV	CAATGCCTTTAGCCACCCAGAGCTACAAAAGATTCTGGGAGTGTGGTTATTGGAGCC	2640
FelisCatus_Switzerland_FeMV	TAATGCCTTTAGCCATCCAGGATATAGAAAGATTCTGGGAATGTGGGTTACTGGAGCC	2640
Porcine_morbillivirus_Swine_Mexico	CAACGCATTAAGTCACCCCGGTTTATCGAAGATTCTGGGACAGTGGGATGATTGAGCC	2640
Dolphin	TAATGCTTTGAGTCATCCTAAAGTCTACAGGAGATTTTGGGACTGTGAATAATTGAGCC	2640
Pilot_Whale_CEMV	TAATGCTCTGAGTCACCTAAGTTTACAGACGGTTCTGGAAGTGGGGGTAATTGAGCC	2640
Canine_CDV	CAATGCATTGAGCCATCCTAAAGTATATAGACGGTTTGGGACAGTGGGATGATTGAACC	2640
Ferret_Australia_CDV	CAATGCATTGAGCCATCCTAAAGTATATAGACGGTTTGGGACAGTGGGATGATTGAACC	2640
	Harbourseal_Netherlands_WaddenSeal_PDV	
	CAACGCTCTAAGCCATCCTAAAGTATATAGGAGATTTTGGGACAGCGGAATGATTGAACC	2640
	GreySeal_Massachusetts_PhocineMorbillivirus	
	CAACGCTCTAAGCCATCCTAAAGTATATAGGAGATTTTGGGACAGCGGAATGATTGAACC	2640

Harp_Seal_Canada_PhocineMorbillivirus	CAACGCTCTAAGCCATCCTAAAGTATATAGGAGATTTTGGGACAGCGGAATGATTGAACC	
	2640	
Siberian_Ibex_PPRV	TAATGCTTTGAGCCACCCCAAAGTTTACAAGAAATTTTGGCGAAGTGGCATCATTGAGCC	2640
Goitered_gazelle_PPRV_Mongolia	TAATGCTTTGAGCCACCCCAAAGTTTACAAGAAATTTTGGCGAAGTGGCATCATTGAGCC	
	2640	
SaigaPPRV	TAATGCTTTGAGCCACCCCAAAGTTTACAAGAAATTTTGGCGAAGTGGCATCATTGAGCC	2640
Bharal_Tibet_PPRV	CAATGCTTTGAGCCACCCCAAAGTTTACAAGAAATTTTGGCGAAGTGGTGTCTATTGAGCC	2640
Ovis_aries_PPRV	CAATGCTTTGAGCCACCCCAAAGTTTACAAGAAATTTTGGCGAAGTGGTGTCTATTGAGCC	2640
nubian_ibex_PPRV	CAATGCTTTGAGCCACCCCAAAGTTTACAAGAAATTTTGGCGAAGTGGTGTCTATTGAGCC	2640
Measles_virus	CAATGCTCTAAGCCACCCCAAAGTCTACAAGAAATTTCTGGCATTGTGGTATTATAGAGCC	2640
Cattle_Rinderpest	GAATGCACTGAGCCACCCCAAAGATTTACAGGAAGTTCTGGCATAGTGGGATTATAGAGCC	2640
Giraffe_Kenya_Rinderpest	GAATGCACTGAGCCACCCCAAAGATTTACAGGAAGTTCTGGTATAGTGGGATTATAGAGCC	2640
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Hendra	CACTCAGGGTCCTTATCTTCACCAACAAGATTTTGAGAAATTATCTCAGAACCTCTTAAT	2700
Nipah_Virus	TACACAGGGTCCTTACCTTCATCAACAAGATTTTGAAAAGTTGTCTCAAAACCTTCTTGT	2700
FelisCatus_Hongkong_FeMV	TATTTATGGGCCCTATATAGGAAGTCAAAATCTACATAATGCAATGATTGATTATATCTA	2700
FelisCatus_Switzerland_FeMV	TATCTATGGGCCCTATATAGGGAGTCAAAATTTACATACTGCAGTGATTGATTATATTTA	2700
Porcine_morbillivirus_Swine_Mexico	AGTGATGGACCATCATTTGGATACACAAAATCTGCATCAAACTGTTTGAACCTCATCTA	
	2700	
Dolphin	AATACACGGCCCTCTCTAGATACTCAAAATTTACATCTCACGGTCTGTAACATGATCTA	2700
Pilot_Whale_CEMV	TATACATGGCCCTTCGTTAGATACCCAAAATTTACATCTCACGGTTTGTAAACATGATTTA	2700
Canine_CDV	TGTTTCATGGACCTCTCTTGACTCCCAAAACCTACATATAACTGTATGCAACCTGATCTA	2700
Ferret_Australia_CDV	TGTTTCATGGACCTCTCTTGACTCCCAAAACCTACATATAACTGTATGCAACCTGATCTA	2700
Harbourseal_Netherlands_WaddenSeal_PDV	TATTCATGGACCTCTCTAGACGCTCAGAAATTTGCATATAACTGTCTGCAATTTGATTTA	
	2700	
GreySeal_Massachusetts_PhocineMorbillivirus	TATTCATGGACCTCTCTAGACGCTCAGAAATTTGCATATAACTGTCTGCAATTTGATTTA	
	2700	
Harp_Seal_Canada_PhocineMorbillivirus	TATTCATGGACCTCTCTAGACGCTCAGAAATTTGCATATAACTGTCTGCAATTTGATTTA	
	2700	
Siberian_Ibex_PPRV	GATTCATGGACCATCCTTGGATACACAGAATTTACATGTCACTGTCTGTGACATGATATA	2700
Goitered_gazelle_PPRV_Mongolia	GATTCATGGACCATCCTTGGATACACAGAATTTACATGTCACTGTCTGTGACATGATATA	
	2700	
SaigaPPRV	GATTCATGGACCATCCTTGGATACACAGAATTTACATGTCACTGTCTGTGACATGATATA	2700
Bharal_Tibet_PPRV	GATTCATGGCCCATCCCTGGATACACAGAATTTACATGTCACTGTCTGTGACATGATATA	2700
Ovis_aries_PPRV	GATTCATGGCCCATCCCTGGATACACAGAATTTACATGTCACTGTCTGTGACATGATATA	2700
nubian_ibex_PPRV	GATCCATGGCCCATCCCTGGATACACAGAATTTACATGTCACTGTCTGTGACATGATATA	2700
Measles_virus	TATCCATGGTCCTTCACTTGATGCTCAAACTTGCACACAAGTGTGTGCAACATGGTTTA	2700
Cattle_Rinderpest	AATCCATGGTCCTTCACTTGATGCTCAAACTTTCATATTACTGTATGTAATATGATCTA	2700
Giraffe_Kenya_Rinderpest	AATTCATGGTCCTTCACTTGATGCTCAAACTTCCATGTTACTGTGTGCAATATGATTTA	2700
	***** ** *	
Hendra	CACATCTTATATGAATTATCTTATGAA-----TTGGTGTGACTTCAAAAAATCCCTTT	2754
Nipah_Virus	AACATCTTATATGATTATCTAATGAA-----CTGGTGTGACTTCAAGAAATCCCTTT	2754
FelisCatus_Hongkong_FeMV	TAATGCATACATGATTATCTTATTTGATCTTATTTATCTGATCAAGTAGATGATGATAT	2760
FelisCatus_Switzerland_FeMV	TAATGCATATATTACTTATCTGGATGCTTATTTATCTGATCAGGTAGATGATACTGATAT	2760
Porcine_morbillivirus_Swine_Mexico	TAACTGCTATGTCACTTACTTAGACCTTCTTCTCAATGATGATATCGATAATTACCCTGT	
	2760	
Dolphin	CCACTGTTATATGATATATCTAGATTTGCTCTTGAATGATGAGCTTGATGATTTCACTTT	2760
Pilot_Whale_CEMV	CCACTGTTATATGGTATACCTAGATTTGCTTTTAAATGATGAGCTCGACGAATTCACTTT	2760
Canine_CDV	TAACTGTTACATGATTACCTAGACCTTCTGTTAAATGATGAATTAGATGATTCTCATT	2760
Ferret_Australia_CDV	TAACTGTTACATGATTACCTAGACCTTCTGTTAAATGATGAATTAGATGATTCTCATT	2760
Harbourseal_Netherlands_WaddenSeal_PDV	TAATTGTTATATGATTTACTTGGATCTTCTGCTGAACGATGAATTAGATGAATTCTCCTT	
	2760	
GreySeal_Massachusetts_PhocineMorbillivirus	TAATTGTTATATGATTTACTTGGATCTTCTGCTGAACGATGAATTAGATGAATTCTCCTT	
	2760	
Harp_Seal_Canada_PhocineMorbillivirus	TAATTGTTATATGATTTACTTGGATCTTCTGCTGAACGATGAATTAGATGAATTCTCCTT	
	2760	
Siberian_Ibex_PPRV	TGGGTCTATGTACCTATTTGGATCTTTTGGCTGAATGATGAGCTAGATGATTACCCGTA	2760
Goitered_gazelle_PPRV_Mongolia	TGGGTCTATGTACCTATTTGGATCTTTTGGCTGAATGATGAGCTAGATGATTACCCGTA	
	2760	
SaigaPPRV	TGGGTCTATGTACCTATTTGGATCTTTTGGCTGAATGATGAGCTAGATGATTACCCGTA	2760
Bharal_Tibet_PPRV	TGGGTCTATGTACCTATTTGGATCTTTTGGCTGAATGATGAGCTAGATGATTACCCGTA	2760
Ovis_aries_PPRV	TGGGTCTATGTACCTATTTGGATCTTTTGGCTGAATGATGAGCTAGATGATTACCCGTA	2760
nubian_ibex_PPRV	TGGGTCTATGTACCTATTTGGATCTTTTGGCTGAATGATGAGCTAGATGATTACCCGTA	2760
Measles_virus	CACATGCTATGACCTACTTCGACCTGTTGTAATGAAGAGTTAGAGAGTTACATT	2760
Cattle_Rinderpest	CAGTTGCTATATGACTTACCTTGACCTACTGTTGAATGACGAAGTGGACGAGTTACATA	2760
Giraffe_Kenya_Rinderpest	CAACTGCTATATGACTTACCTTGACCTACTGTTAAATGATGAATTGGATGAGTTACATA	2760
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Hendra	TTTGATAGCTGAACAAGATGAAGCAGTCGTAGAATTAAGGGAAGATATAATAACATCAAA	2814
Nipah_Virus	TTTAATCGCCGAACAGGATGAACTGTGATAAGTCTACGAGAGGATATAATAACATCCAA	2814
FelisCatus_Hongkong_FeMV	TATAATATGTGAAACAGAGGAGACATGTTTGGCGAATCGAATTGACAATTATCAAAGCAG	
	2820	
FelisCatus_Switzerland_FeMV	CATAATATGCGAAACAGAGGACATGTCTAGCAAACAGGATCGACAATTATCAAAGCAG	
	2820	
Porcine_morbillivirus_Swine_Mexico	TGTTTTATGTGAAAGTGATGAGGAGGTGGTGTCTAGATCGAATTGATAACATTCAGGCTAG	
	2820	
Dolphin	CCTATTGTGCGAGAGTGATGAAGATGTAGTCAGTGACCGTTTGAGAATATCCAAGCAAG	2820

Pilot_Whale_CEMV	CCCGTTGTGTGAGAGTGACGAAGATGTAGTCAATGACCGGTTTGAGAATATCCAAGCAAG	2820
Canine_CDV	CATTTTATGCGAAAAGTGACGAGGATGTCATACCTGAAAGATTTGACAACATACAAGCCAG	2820
Ferret_Australia_CDV	CATTTTATGCGAAAAGTGACGAGGATGTCATACCTGAAAGATTTGACAACATACAAGCCAG	2820
	Harbourseal_Netherlands_WaddenSeal_PDV	
	TATTTTGTGTGAAAAGTGATGAAGATGTTATTCCTGAAAGATTTGATAATATACAAGCCAG	2820
GreySeal_Massachusetts_PhocineMorbillivirus	TATTTTGTGTGAAAAGTGATGAAGATGTTATTCCTGAAAGATTTGATAATATACAAGCCAG	2820
Harp_Seal_Canada_PhocineMorbillivirus	TATTTTGTGTGAAAAGTGATGAAGATGTTATTCCTGAAAGATTTGATAATATACAAGCCAG	2820
Siberian_Ibex_PPRV	TTTGCTCTGCGAGAGTGATGAGGACGTGGTCACAGACAGGTTTCGACAACATTCAAGCCAA	2820
Goitered_gazelle_PPRV_Mongolia	TTTGCTCTGCGAGAGTGATGAGGACGTGGTCACAGACAGGTTTCGACAACATTCAAGCCAA	2820
SaigaPPRV	TTTGCTCTGCGAGAGTGATGAGGACGTGGTCACAGACAGGTTTCGACAACATTCAAGCCAA	2820
Bharal_Tibet_PPRV	TTTGCTCTGCGAGAGTGATGAGGACGTGGTCACAGACAGGTTTCGACAACATTCAAGCCAA	2820
Ovis_aries_PPRV	TTTACTCTGCGAGAGTGATGAGGACGTAGTCACAGACAGGTTTCGACAACATTCAAGCCAA	2820
nubian_ibex_PPRV	TTTACTCTGCGAGAGTGATGAGGACGTGGTCACAGACAGATTTCGACAACATTCAAGCCAA	2820
Measles_virus	TCTTTTGTGTGAAAGCGATGAGGATGTAGTACCGGACAGATTTCGACAACATCCAGGCAAA	2820
Cattle_Rinderpest	CCTCCTCTGCGAAAAGTGATGAGGACATAGTGGCTGACCGCTTTGATAACATACAGGCTAG	2820
Giraffe_Kenya_Rinderpest	TCTCCTCTGCGAAAAGTGACGAGGACATAGTGGCTGACCGCTTTGATAACATACAGGCTAG	2820
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Hendra	ACACCTGTGTATGATAATTGATCTGTACGCAAATCACCATAAGCCACCTTGGATAATTGA	2874
Nipah_Virus	ACATCTCTGTGTTATAATTGACTTATATGCAAATCACCATAAACCTCCTTGGATAATAGA	2874
FelisCatus_Hongkong_FeMV	ACACTTAGCTGTGCTTATAGATCTGTATTGTGATTCCACTAGATGTCCCAATATAAAAAGG	2880
FelisCatus_Switzerland_FeMV	GCATCTAGCTGTACTTATCGATATGTATTGTGATTCCACTAGATGTCTTAATATAAAGGG	2880
Porcine_morbillivirus_Swine_Mexico	ACACTTATGTATAATCACAGATCTTTATTGTGATACAAGAGATTGCCACCTATCAGAGG	2880
Dolphin	GTACCTTTGTATTCTTGACAGATCTGTACTGTAATGCAAAAAACTGCCCGTCAATAAGGGA	2880
Pilot_Whale_CEMV	GCACCTTTGCATTCTTGACAGCCTGTACTGTAATGCTCGGAACTGTCCATCAATAAGAGA	2880
Canine_CDV	GCACCTATGCATCTTATCTGACCTTTATTGTAACCCCTCGTGATTGTCCCCAGATTCTGTGG	2880
Ferret_Australia_CDV	GCACCTATGCATCTTATCTGACCTTTATTGTAACCCCTCGTGATTGTCCCCAGATTCTGTGG	2880
	Harbourseal_Netherlands_WaddenSeal_PDV	
	ACACCTATGTATTCTTGCTGACCTTTATTGCAATCCCCGTAGTTGCCACAGATTTCGAGG	2880
GreySeal_Massachusetts_PhocineMorbillivirus	ACACCTATGTATTCTTGCTGACCTTTATTGCGATCCCCGTAGTTGCCACAGATTTCGAGG	2880
Harp_Seal_Canada_PhocineMorbillivirus	ACACCTATGTATTCTTGCTGACCTTTATTGCAATCCCCGTAGTTGCCACAGATTTCGAGG	2880
Siberian_Ibex_PPRV	ACATCTCTGTGTATTGGCCGATGTATATTGCAGCTCCAAGAGGTGTCTTCAATAATCGG	2880
Goitered_gazelle_PPRV_Mongolia	ACATCTCTGTGTATTGGCCGATGTATATTGCAGCTCCAAGAGGTGTCTTCAATAATCGG	2880
SaigaPPRV	ACATCTCTGTGTATTGGCCGATGTATATTGCAGCTCCAAGAGGTGTCTTCAATAATCGG	2880
Bharal_Tibet_PPRV	ACATCTCTGTGTATTAGCCGATGTATATTGCAGCTCCAAGAGGTGTCTTCAATAATCGG	2880
Ovis_aries_PPRV	ACATCTCTGTGTATTGGCCGATGTATATTGCAGCTCCAAGAGGTGTCTTCAATAATCGG	2880
nubian_ibex_PPRV	ACATCTCTGTGTATTGGCCGATGTATATTGCAGCTCCAAGAGGTGTCTTCAATAATCGG	2880
Measles_virus	ACACTTGTGTGTTCTGGCAGATTGTACTGTCAACCGGACCTGCCACCGATTTCGAGG	2880
Cattle_Rinderpest	ACATCTGTGTGTCCTATCGGATTTATACTGCAATCCAGAGGATGCCCGACCATCAGGGG	2880
Giraffe_Kenya_Rinderpest	ACATCTGTGTGTCCTATCAGATTTATACTGCAATCCAGAAGGTGCCCGACCATCAGGGG	2880
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Hendra	TCTCAACCCACAAGAGAAGATATGTGTTCTTAGGGACTTTATATCTAAGTGCCGTCATAC	2934
Nipah_Virus	TCTAAACCCACAAGAAAAATATGTGTACTGCGTGACTTTATTTCTAAATCTAGGCATGT	2934
FelisCatus_Hongkong_FeMV	GGCAGATACAATTATGAGAAATCAATTCCTTAGATCTTTTCATTGATAATGAGAGGAGAAC	2940
FelisCatus_Switzerland_FeMV	GTCAGATACAATTATGCGGAATTCGATCCTTAGATCTTTTATTGACAATGAGAGAAGAAC	2940
Porcine_morbillivirus_Swine_Mexico	TCTCTCCCCCGCAGAGAAATGCAAAACACTGCTTAAATTTCTGAGGACCCAAGCACAATT	2940
Dolphin	GCTTGACACCTATAAAGAAGTGTGCAGTACTTACACAATTCATTAAATCGGAAGCATTAAAT	2940
Pilot_Whale_CEMV	ACTTACACCTATAGAGAAGTGCGCCGTACTGACACAGTTTATCAAGTCGGAGGCCTTAAC	2940
Canine_CDV	GTTGACACCAACACAGAAATGTGCTGTGTTGTGCGGGGTACTTAAATCAAAAGCCCTAGA	2940
Ferret_Australia_CDV	GTTGACACCAACACAGAAATGTGCTGTGTTGTGCGGGGTACTTAAATCAAAAGCCCTAGA	2940
	Harbourseal_Netherlands_WaddenSeal_PDV	
	ATTAACACCAACACAGAAGTGTGCTGTTTTAATAAAATACCTAAAGCTGCAAGCTCTAGA	2940
	GreySeal_Massachusetts_PhocineMorbillivirus	
	ATTAACACCAACACAGAAGTGTGCTGTTTTAACAAAATACCTAAAGCTGCAAGCTCTAGA	2940
Harp_Seal_Canada_PhocineMorbillivirus	ATTAACACCAACACAGAAGTGTGCTGTTTTAACAAAATACCTAAAGCTGCAAGCTCTAGA	2940
Siberian_Ibex_PPRV	GATGTCTCCTATAGAAAAATGTACCATTCTCACACATTACATCAAGGGAGAATCAGTACA	2940
Goitered_gazelle_PPRV_Mongolia	GATGTCTCCTATAGAAAAATGTACCATTCTCACACATTACATCAAGGGAGAATCAGTACA	2940
SaigaPPRV	GATGTCTCCTATAGAAAAATGTACCATTCTCACACATTACATCAAGGGAGAATCAGTACA	2940
Bharal_Tibet_PPRV	GATGTCTCCTATAGAAAAATGTACCATTCTCACACATTACATCAAGGGAGAATCAGTACA	2940
Ovis_aries_PPRV	GATGTCTCCTATAGAAAAATGTACCATTCTCACACATTACATCAAGGGAGAATCAGTACA	2940
nubian_ibex_PPRV	GATGTCTCCTATAGAAAAATGTACCATTCTCACACATTACATCAAGGGAGAATCAGTACA	2940
Measles_virus	TCTAAGGCCGGTAGAGAAATGTGCAGTTCTTAACCGATCATATCAAGGCAGAGGCTAGGTT	2940
Cattle_Rinderpest	TCTACAACCAAGTAGAGAAATGTGCCATCATGACCAACACATCGAGGCCGAGGCAAAACT	2940
Giraffe_Kenya_Rinderpest	CCTACAGCCAGTGAAAAATGTGCCATCATGACCAGACACATCGAGGCCGAGGCAAAACT	2940
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Hendra	TGATGTGTCATCTAGGTCTTGGAATATCACTGATCTGGATTTTATGGTTTTTATGCTTC	2994
Nipah_Virus	GGACACGTCCTCCAGATCATGGAATACTTCTGACCTGGATTTTGAATATCTATGCATC	2994
FelisCatus_Hongkong_FeMV	AAATCCACTCGGTTTGACATGGAACCTTGACCGTTACTCGTGGATCATTTTAGCTGTTC	3000
FelisCatus_Switzerland_FeMV	AAATCCACTCGGTTTGACATGGAATCTTGATCCGTTACTTGTGGATCACTTTAGCTGTTC	3000
Porcine_morbillivirus_Swine_Mexico	AGACCCGTCGGTTTATCTTGGAATGATCAACCGATTTTAGTAGATCAATATTCCTGCTC	3000
Dolphin	TTCTCCTGGGGGGTTGGATTGGAATGATGAACCGATAGTAGTAGACCACTTTTCTTGCTC	3000
Pilot_Whale_CEMV	TTCTCCTGGGGGGCTGAGTTGGAATGATGACCCGATAGTAGTGGACCACTTTTCTTGCTC	3000
Canine_CDV	ATCCCATGTTGGTCTGACATGGAATGACAAACCTATCTTAATAGATCAATATTCATGTTC	3000
Ferret_Australia_CDV	ATCCCATGTTGGTCTGACATGGAATGACAAACCTATCTTAATAGATCAATATTCATGTTC	3000
Harbourseal_Netherlands_WaddenSeal_PDV	ATCTCATGTTGGCTTAACATGGAATGACAAGCCTATTTTAATTGATCAATATTCATGTTC	3000
GreySeal_Massachusetts_PhocineMorbillivirus	ATCTCATGTTGGCTTAACATGGAATGACAAGCCTATTTTAATTGATCAATATTCATGTTC	3000
Harp_Seal_Canada_PhocineMorbillivirus	ATCTCATGTTGGCTTAACATGGAATGACAAGCCTATTTTAATTGATCAATATTCATGTTC	3000
Siberian_Ibex_PPRV	ATCCCGTCTGGGACCTCATGGAACACTGATCCCTTGTGTAGATCATTACTCATGCTC	3000
Goitered_gazelle_PPRV_Mongolia	ATCCCGTCTGGGACCTCATGGAACACTGATCCCTTGTGTAGATCATTACTCATGCTC	3000
SaigaPPRV	ATCCCGTCTGGGACCTCATGGAACACTGATCCCTTGTGTAGATCATTACTCATGCTC	3000
Bharal_Tibet_PPRV	ATCCCGTCTGGGACCTCATGGAACACTGATCCCTTGTGTAGATCATTACTCATGCTC	3000
Ovis_aries_PPRV	ATCCCGTCAGGGACCTCATGGAACACTGATCCCTTGTGTAGATCATTACTCATGCTC	3000
nubian_ibex_PPRV	ATCCCGTCAGGGACCTCATGGAACACTGATCCCTTGTGTAGATCATTACTCATGCTC	3000
Measles_virus	ATCTCCAGCAGGATCTTCGTGGAACATAAATCCAATTATTGTAGACCACTTACTCATGCTC	3000
Cattle_Rinderpest	ATCCCTCGCTGGCCCTTCATGGAACATAGGCCCATTTGTAATTGATCACTTCTCTTGTTTC	3000
Giraffe_Kenya_Rinderpest	ATCCCTCGCTGGCCCTTCATGGAATATAGATCCTATTGTAATTGACCACTTCTCTTGTTTC	3000
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Hendra	GTTGACTTATCTAAGAAGAGGAATAATCAAGCAGCTCAGAATTAGGCAAGTGACAGAAGT	3054
Nipah_Virus	TTTGACTTATTTGAGAAGAGGTATATAAAACAATTAAGGATAAGACAAGTTACTGAGGT	3054
FelisCatus_Hongkong_FeMV	TATTACGTATCTGAGGAGAGGTATTATTAAACAGATGAGGTAAAGATTGATCCAAACAT	3060
FelisCatus_Switzerland_FeMV	TATTACGTATCTGAGAAGAGGTATTATTAAACAGATGAGGTAAAGATTGATCCAAACAT	3060
Porcine_morbillivirus_Swine_Mexico	TTTAACCTACCTTAGAAGAGGATGCATAAAGCAAATCAGGCTAAGGGTAGATCCTGGGTT	3060
Dolphin	CTTAACATATCTCAGAAGAGGGGCGGTTAAACAGATCAGGCTGAGGGTTGATCCTGGGTT	3060
Pilot_Whale_CEMV	CTTGACATACCTCAGACGAGGGGCGGTTAAACAGATCAGACTGAGAGTTGATCCCGGGTT	3060
Canine_CDV	CCTGACATATCTTAGAAGAGGCTCAATCAAGCAGATAAGATTGAGAGTGGATCCCGGATT	3060
Ferret_Australia_CDV	CCTGACATATCTTAGAAGAGGCTCAATCAAGCAGATAAGATTGAGAGTGGATCCCGGATT	3060
Harbourseal_Netherlands_WaddenSeal_PDV	CTTAACCTACCTGAGAAGAGGGTCTATCAAGCAAATAAGATTAGAGTGGACCTGGATT	3060
GreySeal_Massachusetts_PhocineMorbillivirus	CTTAACCTACCTGAGAAGAGGGTCTATCAAGCAAATAAGATTAGAGTGGACCTGGATT	3060
Harp_Seal_Canada_PhocineMorbillivirus	CTTAACCTACCTGAGAAGAGGGTCTATCAAGCAAATAAGATTAGAGTGGACCTGGATT	3060
Siberian_Ibex_PPRV	TCTGACCTACCTTCGCCGCGGTTCCATCAAACAAATCAGGTTGAGGGTGGATCCTGGGTT	3060
Goitered_gazelle_PPRV_Mongolia	TCTGACCTACCTTCGCCGCGGTTCCATCAAACAAATCAGGTTGAGGGTGGATCCTGGGTT	3060
SaigaPPRV	TCTGACCTACCTTCGCCGCGGTTCCATCAAACAAATCAGGTTGAGGGTGGATCCTGGGTT	3060
Bharal_Tibet_PPRV	TCTGACCTACCTTCGCCGCGGTTCCATCAAACAAATCAGGTTGAGGGTGGATCCTGGGTT	3060
Ovis_aries_PPRV	TCTGACCTACCTTCGCTCGGTTCCATCAAACAAATCAGGTTGAGAGTGGATCCTGGGTT	3060
nubian_ibex_PPRV	TCTGACCTACCTTCGCCGCGGTTCCATCAAACAAATCAGGTTGAGAGTGGATCCTGGGTT	3060
Measles_virus	TCTGACTTATCTCCGTCGAGGATCTATCAAACAGATAAGATTGAGAGTTGATCCAGGATT	3060
Cattle_Rinderpest	TCTGACTTACTTAAGGCGGGGTTCCATCAAGCAAATTCGGTTGAGGGTTGATCCAGGATT	3060
Giraffe_Kenya_Rinderpest	CCTGACTTACTTAAGGCGGGGTTCCATCAAGCAAATTCGATTGAGGGTTGACCCAGGATT	3060
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Hendra	AATCGACACCACTACAATGCTAAGAGATAATATTTTAGTAGAAAAACCGCCTATTAAAAAC	3114
Nipah_Virus	TATAGATACCACAACAATGTTAAGGGACAATATAATTGTAGAGAATCCTCTATTAAAAAC	3114
FelisCatus_Hongkong_FeMV	ATCGTTGGAACATCTAGGATGATTAAAGCCTGATGCGGTTTATCAAGCACCTAAAATTCC	3120
FelisCatus_Switzerland_FeMV	ATCTCTTGAGTTAGCCAAGATGATCAAACCTGATGTAATTTATCAAGCACCTAAAGTTCC	3120
Porcine_morbillivirus_Swine_Mexico	TGTGTGCTGAGTGCCTCTCAGAATCCAAAGATCCCCCTCGCATTATGAGGTCAGGCAAACA	3120
Dolphin	CGTATCGGAAGTTCTAATTGACGCTTCTGACCATAACCTGGGACCAATTAAAGCTAAGGA	3120
Pilot_Whale_CEMV	CGTATCGGAAGCTCTAATTGATGCTTCTAACCATAGTCCAGGATCACTTAAGGCTAAGGA	3120
Canine_CDV	CATCACTGATGCTGTTGGATGCTTAGAAAGGCGTCTCTAAGAAATAATTCTACCTCTAA	3120
Ferret_Australia_CDV	CATCACTGATGCTGTTGGATGCTTAGAAAGGCGTCTCTAAGAAATAATTCTACCTCTAA	3120
Harbourseal_Netherlands_WaddenSeal_PDV	TATTGCAGACGCCATCGGGGATGTGGGAAATAGTCCCTTAAAAAGAGGCCCTGCCTCTGT	3120
GreySeal_Massachusetts_PhocineMorbillivirus	TATTGCAGACGCCATCGGGGATGTGGGAAATAGTCCCTTAAAAAGAGGCCCTGCCTCTGT	3120
Harp_Seal_Canada_PhocineMorbillivirus	TATTGCAGACGCCATCGGGGATGTGGGAAATAGTCCCTTAAAAAGAGGCCCTGCCTCTGT	3120
Siberian_Ibex_PPRV	TGTATTGAGGCGTTGACAGACGTCGACTTTAAACAACCTCGCAAAGCTAAGTTAGATAT	3120

Goitered_gazelle_PPRV_Mongolia	TGTATTGAGGCGTTGACAGACGTCGACTTTAAACAACCTCGCAAAGCTAAGTTAGATAT	
	3120	
SaigaPPRV	TGTATTGAGGCGTTGACAGACGTCGACTTTAAACAACCTCGCAAAGCTAAGTTAGATAT	3120
Bharal_Tibet_PPRV	TGTATTGAGGCGTTGACAGACGTCGACTTTAAACAACCTCGCAAAGCTAAGTTAGATAT	3120
Ovis_aries_PPRV	TGTATTGAGGCGTTGACAGACGTCGACTTTAAACAAGCCTCGCAAAGGCTAAGTTAGATAT	3120
nubian_ibex_PPRV	TGTATTGAGGCGTTGACAGACGTCGACTTTAAACAAGCCTAGCAAAGGCTAAGTTAGATAT	3120
Measles_virus	CATTTTTGACGCCCTCGCTGAGGTAAATGTCAGTCAGCCAAAGGTGCGGCAGCAACAACAT	3120
Cattle_Rinderpest	CATTTTTGAGGCTCTAACTGTAACAGATCCGCAGAAACCCAACTTTCAGCATGAACAAGC	3120
Giraffe_Kenya_Rinderpest	CATTTTTGAAGCTCTAACTGAAACAGATCCGCAGAAACCCAACTACAGCATGACCAAGT	
	3120	
Hendra	TGGAGTACTAGATATTAGAGGTTGC-----ATAATATATAATCTAGAAGAAATCTTATC	3168
Nipah_Virus	AGGAGTGTTAGACATCAGAGGTTGT-----ATAATATACAATTTAGAGGAAATCCTGTC	3168
FelisCatus_Hongkong_FeMV	GTCTTCATGGGCTCTTATAGATATCAACCCTGAAGTAAATGACCTTAATGTAATTTTGG	3180
FelisCatus_Switzerland_FeMV	GTCTTCATGGGCTCTTATAGATATCAATCCTGAAGTCAATGATCTTAATACAATTTTGG	3180
Porcine_morbillivirus_Swine_Mexico	GGATACCCAGATGAGCCTAGGACTTGAACCCCCCTTAGACGATTTACTATCATTAAATGGG	
	3180	
Dolphin	GATTAAATTAGATAGCATAAATTTCTATCCCCCAAGGAAGATGTTGCACGATTACTCAG	3180
Pilot_Whale_CEMV	GGTTAAATTAGATAGCATAAATTTCTATCCCCCAAGGAAGATGTCGCACGATTACTCAG	3180
Canine_CDV	GGCCTCAGAATTAACGTCAGGATTTGACCCACCGAAAGATGACTTGGCTAAACTTCTGAG	3180
Ferret_Australia_CDV	GGCCTCAGAATTAAGTCAGAATTTGACCCACCGAAAGATGACTTGGCTAAACTTCTGAG	3180
	Harbourseal_Netherlands_WaddenSeal_PDV	
	ACCTCTCACCTTAAAAACAGGATTTGACCCGCCTAAAGATGATCTTACAAAACCTTTTAAG	3180
	GreySeal_Massachusetts_PhocineMorbillivirus	
	ACCTCTCACCTTAAAAACAGGATTTGACCCGCCTAAAGATGATCTTACAAAACCTTTTAAG	3180
Harp_Seal_Canada_PhocineMorbillivirus	ACCTCTCACCTTAAAAACAGGATTTGACCCGCCTAAAGATGATCTTACAAAACCTTTTAAG	
	3180	
Siberian_Ibex_PPRV	ATCGGTCGTTGGGTTGACTGATTTCTCTCCCCCTTACGACAACGTCGGTGATTTTTTAGG	3180
Goitered_gazelle_PPRV_Mongolia	ATCGGTCGTTGGGTTGACTGATTTCTCTCCCCCTTACGACAACGTCGGTGATTTTTTAGG	
	3180	
SaigaPPRV	ATCGGTCGTTGGGTTGACTGATTTCTCTCCCCCTTACGACAACGTCGGTGATTTTTTAGG	3180
Bharal_Tibet_PPRV	ATCGGTCGTTGGGTTGACTGATTTCTCTCCCCCTTACGACAACGTCGGTGATTTTCTAGG	3180
Ovis_aries_PPRV	ATCGGTCGTTGGGTTGACTGATTTCTCTCCCCCTTACGACAACGTCGGTGATTTTCTAGG	3180
nubian_ibex_PPRV	ATCGGTCGTTGGGTTAACTGATTTCTCTCTCTTACGACAACGTCGGTGATTTTCTAGG	3180
Measles_virus	CTCAAATATGACGATCAAGGATTTGACGCTCCACAGCATGATGTTGCAAAATTGCTCAA	3180
Cattle_Rinderpest	CGCTGATATGCACATAAGCAATTTAGGCCGCCCTATGATGTTGTCAGAGCTGTTAGG	3180
Giraffe_Kenya_Rinderpest	CGCTGATATGCACATAAGCAATTTAGGCCGCCCTATGATAATGTGGCAGAACTATTAGG	3180
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Hendra	AATGAATACTAAGTCCACGTCAGAAAGGTTTCAATTTGGGTTCAAAGTTGTGTCAGTTGA	3228
Nipah_Virus	TATGAACACAAAATCAGCATCAAAAAAGATCTTTAATCTTAATAGTAGGCCGTCAGTGGA	3228
FelisCatus_Hongkong_FeMV	AGAGCTGAATAGCAAATGGAAGACATTCTTATTGGACAGATTAGGATACAGAATTATGA	
	3240	
FelisCatus_Switzerland_FeMV	AGAGCTGAACAGCAAATGGAAGATATTCTATCGGGCAAATTAGGATCCAGAATTATGA	
	3240	
Porcine_morbillivirus_Swine_Mexico	ATCTATTAACACAAATGCACACAATATTTCCCGTGATAGGGGAAGGTCTCCGAAATTACGA	
	3240	
Dolphin	TACTATAGGCACAGCCCAGCATGATCTCCCCATAATCGGTACTAGAGTAATCAACTATGA	3240
Pilot_Whale_CEMV	CACTATAAGTACAACCCAGCATAACCTTCCCATAGTCGGTACAGGAGTGCTAAGCTATGA	3240
Canine_CDV	TCAGCTGTCAACAAGGACACATAACTTACCTATTACAGGATTAGGAGTCCGGAACCTATGA	3240
Ferret_Australia_CDV	TCAGCTGTCAACAAGGACACATAACTTACCTATTACAGGATTAGGAGTCCGGAACCTATGA	3240
	Harbourseal_Netherlands_WaddenSeal_PDV	
	TCAATTGTCAACAAAAACCCATAACTTGCCAATTACCGGCTTAGGAGTTAGAAATTACGA	3240
	GreySeal_Massachusetts_PhocineMorbillivirus	
	TCAATTGTCAACAAAAACCCATAACTTGCCAATTACCGGCTTAGGAGTTAGAAATTACGA	3240
Harp_Seal_Canada_PhocineMorbillivirus	TCAATTGTCAACAAAAACCCATAACTTGCCAATTACCGGCTTAGGAGTTAGAAATTACGA	
	3240	
Siberian_Ibex_PPRV	AACTATCAACACATTGAGGCACGATCTGCCTGTACACCGGAACCGGGGTCTCGAACTATGA	3240
Goitered_gazelle_PPRV_Mongolia	AACTATCAACACATTGAGGCACGATCTGCCTGTACACCGGAACCGGGGTCTCGAACTATGA	
	3240	
SaigaPPRV	AACTATCAACACATTGAGGCACGATCTGCCTGTACACCGGAACCGGGGTCTCGAACTATGA	3240
Bharal_Tibet_PPRV	GACTATCAACACATTGAGGCACAATCTGCCTGTACACCGGAACCGGGGTCTCGAACTATGA	3240
Ovis_aries_PPRV	GACTATCAACACATTGAGGCACAATCTGCCTGTACACCGGAACCGGGGTCTCGAACTATGA	3240
nubian_ibex_PPRV	GACTATCAACACATTGAGGCACGATCTGCCTGTACACCGGAACCGGGGTCTCGAACTATGA	3240
Measles_virus	AGATATCAACAAGCAAGCAACAATCTTCCCATTTCAGGGGGTAGTCTCGCCAATTATGA	3240
Cattle_Rinderpest	GACGATAAACTCGAGTAAGCATAACCTTCTTATACTTGGCACAGGTGTTTATAATTACGA	3240
Giraffe_Kenya_Rinderpest	GACCATAAACTCAAGTAAACACAACCTTCTTATACTCGGCACAGGTATTTGTAATTATGA	3240
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Hendra	AAACCACAAATATAGAAGGATAGGATTAATTCGTCCTTCTTGCTACAAGGCATTAAATCT	3288
Nipah_Virus	GAATCATAAATATAGAAGGATAGGTCTCAACTCATCATCTTGTACAAGGCATTAAATCT	3288
FelisCatus_Hongkong_FeMV	AATACATGCATATAGGAGGATCGGAGTTAAITCAACTGCATGTTATAAAGCTCTAGAGCT	
	3300	
FelisCatus_Switzerland_FeMV	GATACATGCATATAGGAGAATTGGGATTAATTCAACTGCATGTTATAAGGCTCTAGAGAT	3300
Porcine_morbillivirus_Swine_Mexico	AATCCATGCATTTAGAAGGTTGGGTGTAACTCAACAGCATGTTATAAAGCAGTAGAAAT	
	3300	
Dolphin	AGTACACGCTTACAGGAGAATAGGGTTGAACTCATCTGCTTGCTACAAGGCAGTAGAAGT	3300
Pilot_Whale_CEMV	AGTACATGCTTACAGGAGAATAGGGTTAACTCATCTGCTTGCTATAAGGCAGTGAGGT	3300



Canine_CDV	GGTTCATTCAATTCAGAGAATTGGGATCAACTCTACTGCATGTTACAAGGCAGTTGAAAT	3300
Ferret_Australia_CDV	GGTTCATCTCAATTCAGAGAATTGGGATCAACTCTACTGCATGTTACAAGGCCGTTGAAAT	3300
Harbourseal_Netherlands_WaddenSeal_PDV		
	AATTCACGCATTAGGAGAATCGGGGTTAACTCTACTGCCTGCTATAAAGCAGTTGAGAT3300	
GreySeal_Massachusetts_PhocineMorbillivirus	AATTCATGCATTAGGAGAATCGGGGTTAACTCTACTGCCTGCTATAAAGCAGTTGAGAT	
	3300	
Harp_Seal_Canada_PhocineMorbillivirus	AATTCATGCATTAGGAGAATCGGGGTTAACTCTACTGCCTGCTATAAAGCAGTTGAGAT	
	3300	
Siberian_Ibex_PPRV	AGTCCACGCTTATCGTAGAATTGGCCTGAATTCATCAGCATGTTATAAAGCCGTAGAGAT	3300
Goitered_gazelle_PPRV_Mongolia	AGTCCACGCTTATCGTAGAATTGGCCTGAATTCATCAGCATGTTATAAAGCCGTAGAGAT	
	3300	
SaigaPPRV	AGTCCACGCTTATCGTAGAATTGGCCTGAATTCATCAGCATGTTATAAAGCCGTAGAGAT	3300
Bharal_Tibet_PPRV	AGTCCACGCTTATCGTAGAATTGGCCTAAATTCATCAGCATGTTACAAAGCCGTAGAGAT	3300
Ovis_aries_PPRV	AGTCCACGCTTATCGTAGAATTGGCCTGAATTCATCAGCATGTTATAAAGCCGTAGAGAT	3300
nubian_ibex_PPRV	AGTCCACGCTTATCGTAGAATTGGCCTGAATTCATCAGCATGTTATAAAGCCGTAGAGAT	3300
Measles_virus	AATCCATGCTTTCCGCAGAAATCGGGTAACTCATCTGCTTGCTACAAAGCTGTTGAGAT	3300
Cattle_Rinderpest	GGTCCATGCGTTTCGCAGGATAGGATTAAGTCTGCTTGCTTGCTACAAAGCAGTGAGAT	3300
Giraffe_Kenya_Rinderpest	GGTCCATGCATTTCCGAGGATAGGATTAAGTCTGCTTGCTTGCTACAAAGCAGTAGAGAT	3300
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Hendra	GTCACCGTTGATTCAACGCTACCTGCCCGCAGGTTCAACGATTATTTGTAGGTGAAGG	3348
Nipah_Virus	ATCACCTCTGATTCAAAGGTATTTGGCGTCGGGAGCTCAAAGGTTGTTTATAGGAGAAGG	3348
FelisCatus_Hongkong_FeMV	ATTGCTGTTCTAAATCGGTTTATGTCTAATCCATCAGGTGCATTGTTTTAGGTGAAGG	3360
FelisCatus_Switzerland_FeMV	ATTATCTGTTTTAAGTCGATTATGTCTCAATCCATTAGGTGCATTATTTTTAGGTGAAGG	3360
Porcine_morbillivirus_Swine_Mexico	TGCATCATGTATCCGCTGCCATTTTGAAGAAGGTACCAAGGGCTGTTTCTCGGGGAAGG	
	3360	
Dolphin	ATCCTCGGTAATCAAGAGCATGATTGAACAGGAGAGGATGGGTATTCTTGGGTGAAGG	3360
Pilot_Whale_CEMV	ATCTTCAGTGATCAAGAGCATGGTTGAACAGGAGAGGATGGATTGTTCTTAGGTGAGGG	3360
Canine_CDV	AGCTTCCGTGATTAAGAACGAATTTACGTCTGAAGAACACGGATTATTCCTAGGAGAAGG	3360
Ferret_Australia_CDV	AGCTTCTGTGATTAAGAACGAATTTACGTCTGAAGAACACGGATTATTCCTAGGAGAAGG	3360
	Harbourseal_Netherlands_WaddenSeal_PDV	
	AATTTCTCTTATCAAAAAAGAAATTCTCTACAGGAGAACACGGATTATTTTTGGGAGAAGG	3360
	GreySeal_Massachusetts_PhocineMorbillivirus	
	AATTTCTCTTATCAAAAAAGAAATTCTCTACAGGAGAACACGGATTATTTTTGGGAGAAGG	3360
Harp_Seal_Canada_PhocineMorbillivirus	AATTTCTCTTATCAAAAAAGAAATTCTCTACAGGAGAACACGGATTATTTTTGGGAGAAGG	
	3360	
Siberian_Ibex_PPRV	CTCCACGTTAATCAAGCCATCCTTAGAAGTCGGAGAGCATGGATTGTTCTTAGGAGAAGG	3360
Goitered_gazelle_PPRV_Mongolia	CTCCACGTTAATCAAGCCATCCTTAGAAGTCGGAGAGCATGGATTGTTCTTAGGAGAAGG	
	3360	
SaigaPPRV	CTCCACGTTAATCAAGCCATCCTTAGAAGTCGGAGAGCATGGATTGTTCTTAGGAGAAGG	3360
Bharal_Tibet_PPRV	CTCCACGTTAATCAAGCCATCCTTAGAAGTCGGAGAGCATGGATTGTTCTTAGGAGAAGG	3360
Ovis_aries_PPRV	CTCCACGTTAATCAAGCCATCCTTAGAAGTCGGAGAGCATGGATTGTTCTTAGGAGAAGG	3360
nubian_ibex_PPRV	CTCCACGTTAATCAAGCCATCCTTAGAAGTCGGAGAGCATGGATTGTTCTTAGGAGAAGG	3360
Measles_virus	ATCAACATTAATTAGGAGATGCTTTGAGCCAGGGGAAGACGGCTTGTTCTTGGGTGAGGG	3360
Cattle_Rinderpest	ATCCACGCTAATCAAGAGCTCTTAGGACCCAGGAGGATAGCTTGTCTTAGGGGAAGG	3360
Giraffe_Kenya_Rinderpest	ATCTACACTAGTCAAGAGTTCTATAGATCCAGGAGAAGCTAGTTTGTCTTAGGAGAAGG	3360
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Hendra	GTCAGGAAGTATGATGCTATTATATCAACAGACTTTAGGATGTTGATATCCTTTTACAA	3408
Nipah_Virus	TTCTGGGAGCATGATGTTATTATATCAGTCTACATTGGGGCAATCAATTTCTTTTACAA	3408
FelisCatus_Hongkong_FeMV	AGCAGGATCAATGCTGGTCACATACCGTGCTTTTGTCCCATTTAAGACAATTTATTATAA	3420
FelisCatus_Switzerland_FeMV	AGCAGGATCGATGCTGGTCACATACCGTGCTTTTATTCCATTTAAGACAATTTATTATAA	3420
Porcine_morbillivirus_Swine_Mexico	GTCTGGAGCAATGCTGGTTGCATATAAGGAAATTCTAAATTAGGCAGATGCTATTATAA	
	3420	
Dolphin	TTCAGGTTCTATGCTAGTCACGTATAGGGAATACTCAAGCTTAAACGTTGTTATTACAA	3420
Pilot_Whale_CEMV	ATCAGGTTCATGCTAGTAACATATAGAGAAATACTGAAGTCAAAACACTGTTATTATAA	3420
Canine_CDV	TTCAGGTGCAATGTTGACAGTATATAAAGAGCTATTAAGATTGTCAAGATGTTATTATAA	3420
Ferret_Australia_CDV	TTCAGGTGCAATGTTGACAGTATATAAAGAGCTATTAAGATTGTCAAGATGTTATTATAA	3420
Harbourseal_Netherlands_WaddenSeal_PDV	CTCAGGTGCTATGCTGACTGTATATAAAGAGTTATTAAGGTTAACAAGATGCTACTATAA	
	3420	
GreySeal_Massachusetts_PhocineMorbillivirus	CTCAGGTGCTATGCTGACTGTATATAAAGAGTTATTAAGGTTAACAAGATGCTACTATAA	
	3420	
Harp_Seal_Canada_PhocineMorbillivirus	CTCAGGTGCTATGCTGACTGTATATAAAGAGTTATTAAGGTTAACAAGATGCTACTATAA	
	3420	
Siberian_Ibex_PPRV	TTCCGGTTCAATGCTGGCTGCGTACAAAGAAGTTCTTAAATTAGCAAATTTGTTACTACAA	3420
Goitered_gazelle_PPRV_Mongolia	TTCCGGTTCAATGCTGGCTGCGTACAAAGAAGTTCTTAAATTAGCAAATTTGTTACTACAA	
	3420	
SaigaPPRV	TTCCGGTTCAATGCTGGCTGCGTACAAAGAAGTTCTTAAATTAGCAAATTTGTTACTACAA	3420
Bharal_Tibet_PPRV	TTCCGGTTCAATGCTGGCTGCGTACAAAGAAGTTCTTAAATTAGCAAATTTGTTATTACAA	3420
Ovis_aries_PPRV	TTCCGGTTCAATGCTGGCTGCGTACAAAGAAGTTCTTAAATTAGCAAATTTGTTATTACAA	3420
nubian_ibex_PPRV	TTCCGGTTCAATGCTGGCTGCGTACAAAGAAGTTCTTAAATTAGCAAATTTGTTATTACAA	3420
Measles_virus	GTCGGGTTCTATGTTGATCACTTATAAGGAGATACTAAACTAAACAAGTGCTTCTATAA	3420
Cattle_Rinderpest	ATCAGGGTCAATGTTGATAACGTATAAAGAAATCCTTAAATTAAAGAAGTGCTTTTACAA	3420
Giraffe_Kenya_Rinderpest	ATCAGGGTCAATGTTGTAACATATAAAGAAGTCCTTAAGTTGGAGAAGTGCTATTACAA	3420
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Hendra	CTCCGGTATTGATGGTGATTATATACCAGGGCAGAGAGAATTGAGATTATCCCTTCCGA	3468
Nipah_Virus	TTCAGGTATAGATGGAGATTATATACCAGGTCAAAGAGAACTGAAACTATTTCCCTCTGA	3468

FelisCatus_Hongkong_FeMV	TAGTGGGTATTTCAGTTCCAAATGTTACAGGCCACAGAGAATTGAGTCTATATCCATCTGA	3480
FelisCatus_Switzerland_FeMV	TAGTGGCATTTCGTGCAAAATGTGCAAGGTCAGAGAGAATTAAGTCTATATCCATCTGA	3480
Porcine_morbillivirus_Swine_Mexico	CAGTGGTGTCTCTCTGTATCCCGAACTGGTCAACGGGAACTATCCCCGTACCCATCAGA	3480
Dolphin	CAGAGGAGTGTCAAGTCTAGATCTGGGCAAAGAGAGATATCTCCCTATCCATCAGA	3480
Pilot_Whale_CEMV	TAGTGGAGTATCCGTCGAGTTCAGATCCGGGCAAAGAGAGATATCTCCTTATCCATCAGA	3480
Canine_CDV	CAGTGGTGTGTCGGTAGAATCCAGAACTGGACAACGAGAGATTTACCTTACCTTCTGA	3480
Ferret_Australia_CDV	CAGTGGTGTGTCGGTAGAATCCAGAACTGGACAACGAGAGATTTACCTTACCTTCTGA	3480
	Harbourseal_Netherlands_WaddenSeal_PDV	
	CAGTGGTGTATCAGTAGAGTCAAGAACTGGTCAACGAGAGATCTCACCTTATCCTTCTGA	3480
	GreySeal_Massachusetts_PhocineMorbillivirus	
	CAGTGGTGTATCAGTAGAGTCAAGAACTGGTCAACGAGAGATCTCACCTTATCCTTCTGA	3480
Harp_Seal_Canada_PhocineMorbillivirus	CAGTGGTGTATCAGTAGAGTCAAGAACTGGTCAACGAGAGATCTCACCTTATCCTTCTGA	3480
Siberian_Ibex_PPRV	CAGCGGAGTAACAGCGGAGGGCAGAGCGGACAGAGGGAAATATCTCCCTATCCTTCAGA	3480
Goitered_gazelle_PPRV_Mongolia	CAGCGGAGTAACAGCGGAGGGCAGAGCCGGACAGAGGGAAATATCTCCCTATCCTTCAGA	3480
		3480
SaigaPPRV	CAGCGGAGTAACAGCGGAGGGCAGAGCCGGACAGAGGGAAATATCTCCCTATCCTTCAGA	3480
Bharal_Tibet_PPRV	CAGCGGGGTAACAACGGAGGGCAGAGCCGGACAGAGGGAAATATCTCCCTATCCTTCAGA	3480
Ovis_aries_PPRV	CAGCGGGGTAACAGCGGAGGGCAGAGCCGGACAGAGGGAAATATCTCCCTATCCTTCAGA	3480
nubian_ibex_PPRV	CAGCGGGGTAACAGCGGAGGGCAGAGCCGGACAGAGGGAAATATCTCCCTATCCTTCAGA	3480
Measles_virus	TAGTGGGGTTTCCGCCAATTCTAGATCTGGTCAAAGGGAATTAGCACCCCTATCCCTCCGA	3480
Cattle_Rinderpest	CAGCGGGGTGTCAGCAGAATCTAGATCAGGCCAGCGAGAGTTAGCCCTTACCCATCTGA	3480
Giraffe_Kenya_Rinderpest	CAGCGGGGTATCAATAGAATCCAGGTACGGTCAGCGGGAGTTAGCCCTTACCCGTCTGA	3480
	*** **	
Hendra	ATATTCAATAGCTGAAGACGATCCGTCACAATCTGATAAGCTAAAAGGTCTAGTGGTCCC	3528
Nipah_Virus	ATACTCAATTGCTGAGGAAGACCCATCTCTGACGGGGAAATTGAAAGGACTAGTGGTGCC	3528
FelisCatus_Hongkong_FeMV	AGTGGCACTAGTTGACAACAAAAAT-----CGTTTGGCTAATGACCCCAATATCAAAGT	3534
FelisCatus_Switzerland_FeMV	AGTGGCACTAGTTGACAACAAAAAT-----CGTTTGGCTAATGACCCCAATATCAAAGT	3534
Porcine_morbillivirus_Swine_Mexico	AGTGAGTATGGTTGAGCATAAAT-----TATGTCCTTGAAAAATCAGTTAGGGT	3528
Dolphin	AGTTAGTCTTGTGTGAACCAAC-----TAGGGCTGGATCGTAGTGTTAAAGT	3528
Pilot_Whale_CEMV	AGTTAGCTTAGTTGAACCAAC-----TCGGGCTGGATCGCAGTATAAAAGT	3528
Canine_CDV	GGTCAGTCTGGTGAACATCAAT-----TAGGACTCGATAAATTGGTGACTGT	3528
Ferret_Australia_CDV	GGTCAGTCTGGTGAACATCAAT-----TAGGACTCGATAAATTGGTGACTGT	3528
Harbourseal_Netherlands_WaddenSeal_PDV	GGTAAGCTTAGTAGAGCATCAAT-----TAGGGCTTGATCGTCTGGCGACTGT	3528
GreySeal_Massachusetts_PhocineMorbillivirus	GGTAAGCTTAGTAGAGCATCAAT-----TAGGGCTTGATCGTCTGGCGACTGT	3528
Harp_Seal_Canada_PhocineMorbillivirus	GGTAAGCTTAGTAGAGCATCAAT-----TAGGGCTTGATCGTCTGGCGACTGT	3528
Siberian_Ibex_PPRV	GATGAGCCTAGTAGAGAATCAAA-----TGGGGATAGAGCGGAGTGTTAAAGT	3528
Goitered_gazelle_PPRV_Mongolia	GATGAGCCTAGTAGAGAATCAAA-----TGGGGATAGAGCGGAGTGTTAAAGT	3528
SaigaPPRV	GATGAGCCTAGTAGAGAATCAAA-----TGGGGATAGAGCGGAGTGTTAAAGT	3528
Bharal_Tibet_PPRV	GATGAGCCTAGTAGAGAATCAAA-----TGGGGATAGAGCGGAGTGTTAAAGT	3528
Ovis_aries_PPRV	GATGAGCCTAGTAGAGAATCAAA-----TGGGGATAGAGCGGAGTGTTAAAGT	3528
nubian_ibex_PPRV	GATGAGCCTAGTAGAGAATCAAA-----TGGGGATAGAGCGGAGTGTTAAAGT	3528
Measles_virus	AGTTGGCCTGTGCGAACACAGAA-----TGGGATAGGTAATATTGTCAAAGGT	3528
Cattle_Rinderpest	GGTAAGCCTGGTCGAACATCAGC-----TTGGTGCAGAGAAAAGTGTCAAAGT	3528
Giraffe_Kenya_Rinderpest	AGTAAGCCTGGTCGAACATCAAC-----TCGGTGTAGAGAAAAGTGTCAAAGT	3528
	*** **	
Hendra	ATTATTTAATGGAAGGCCCGAAACCACGTGGATAGGGAACCTTAGATTCATACGAGTACAT	3588
Nipah_Virus	CCTATTCAATGGAAGACCAGAAACAACATGGATCGGGAATTAGACTCCTACGAGTATAT	3588
FelisCatus_Hongkong_FeMV	CTTGTTCAATGGTAAACCAGAGTCTACGTGGGTTGGAACATCGACTGTTTTGCTTATAT	3594
FelisCatus_Switzerland_FeMV	CTTGTTTAAACGGTAAGCCGGAGTCTACGTGGGTTGGGAATATTGACTGTTTTGCTTATAT	3594
Porcine_morbillivirus_Swine_Mexico	CCTGTTCAATGGTTCGACCTGAAGTAACCTGGGTAGGTAGTGTAGATTGTTATAAGTATAT	3588
Dolphin	ATTATTCAACGGGAAACCAGAGGTGACATGGGTAGGTAATGTAGATTGTTATAAGTATAT	3588
Pilot_Whale_CEMV	GTTATTCAATGGGAAACCAGAGGTAACATGGGTAGGTAATGTGGATTGCTACAAATATAT	3588
Canine_CDV	GCTTTTCAATGGGAGACCAGAAGTAACCTGGGTGGGAGTGTTGATTGTTACAAGTACAT	3588
Ferret_Australia_CDV	GCTTTTCAATGGGAGACCAGAAGTAACCTGGGTGGGAGTGTTGATTGTTACAAGTACAT	3588
	Harbourseal_Netherlands_WaddenSeal_PDV	
	ACTTTTCAATGGAAGACCAGAAGTCACATGGGTCGGGAGTGTTGATTGTTATAAGTATAT	3588
	GreySeal_Massachusetts_PhocineMorbillivirus	
	ACTTTTCAATGGAAGACCAGAGGTCACATGGGTCGGGAGTGTTGATTGTTATAAGTATAT	3588
Harp_Seal_Canada_PhocineMorbillivirus	ACTTTTCAATGGAAGACCAGAGGTCACATGGGTCGGGAGTGTTGATTGTTATAAGTATAT	3588
Siberian_Ibex_PPRV	GCTGTTCACGGGAAACCTGAAGTAACCTGGGTGGGGACCACAGATTGCTACAAGTACAT	3588
Goitered_gazelle_PPRV_Mongolia	GCTGTTCACGGGAAACCTGAAGTAACCTGGGTGGGGACCACAGATTGCTACAAGTACAT	3588
		3588
SaigaPPRV	GCTGTTCACGGGAAACCTGAAGTAACCTGGGTGGGGACCACAGATTGCTACAAGTACAT	3588
Bharal_Tibet_PPRV	GCTGTTCACGGCAAACCTGAAGTAACCTGGGTGGGGACCACCGATTGCTACAAGTACAT	3588
Ovis_aries_PPRV	GCTGTTCACGGCAAACCTGAGGTAACCTGGGTGGGGACCACCGATTGCTACAAGTACAT	3588
nubian_ibex_PPRV	GTTGTTCACGGCAAACCTGAAGTAACCTGGGTGGGGACCACCGATTGCTACAAGTATAT	3588
Measles_virus	GCTCTTTAACGGGAGGCCGAAGTCACGTGGGTAGGCAGTAGATTGCTCAATTTCAT	3588
Cattle_Rinderpest	ACTATTCAACGGGAGGCCGAGGTTACCTGGATAGGTAGTGTAGATTGCTTCAATTATAT	3588
Giraffe_Kenya_Rinderpest	ATTATTCAACGGGAGGCCGAGGTTACCTGGGTAGGCAGTGTAGACTGCTTCAATTATAT	3588
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Hendra	AATCAACAGAACACGCCGGTCGTAACATCGGATTGGTACACTCAGATATGGAATCAGGCAT	3648
Nipah_Virus	CATAAATAGGACAGCGGGGCGAAGTATAGGTCTTGTCATTCTGACATGGAGTCTGGGAT	3648
FelisCatus_Hongkong_FeMV	TCTTAGCCACATTGAGACCTCAAGCTTGACATTGATACATAGTGATATTGAGTCCAGCTT	3654
FelisCatus_Switzerland_FeMV	TCTTAGCCATATTGAGACCTCAAGCTTGACATTGATACACAGTGATATTGAGTCCAGTTT	3654
Porcine_morbillivirus_Swine_Mexico	CTTAAGCCAGATACCTACCGGTAGTATAGCGGTTATACACTCCGATATTGAGAGCCTCCC	3648
Dolphin	CATTAGTAATATACCATCTTCAAGTCTGGGACTAATCCACTCAGATATCGAGACCTTACC	3648
Pilot_Whale_CEMV	CATTAGTAACATACCATCTTCGAGTCTGGGACTAATCCACTCAGATATCGAGACTTTGCC	3648
Canine_CDV	ACTGAGCCAGATCTCTGCTAGCAGTCTTGGGTTGATTCACTCGGATATAGAGTCACTACC	3648
Ferret_Australia_CDV	ACTGAGCCAGATCTCTGCTAGCAGTCTTGGGTTGATTCACTCGGATATAGAGTCACTACC	3648
Harbourseal_Netherlands_WaddenSeal_PDV	ACTTAGCCAAATACCTGCTAGCAGTCTAGGATTAATACACTCAGACATAGAATCACTTCC	3648
GreySeal_Massachusetts_PhocineMorbillivirus	ACTTAGCCAAATACCCGCTAGCAGTCTAGGATTAATACACTCAGACATAGAATCACTTCC	3648
Harp_Seal_Canada_PhocineMorbillivirus	ACTTAGCCAAATACCCGCTAGCAGTCTAGGATTAATACACTCAGACATAGAATCACTTCC	3648
Siberian_Ibex_PPRV	AATCAGTAACATCCAAACCTCTAGTCTGGGTTTCATACATTAGATATTGAGACGCTCCC	3648
Goitered_gazelle_PPRV_Mongolia	AATCAGTAACATCCAAACCTCTAGTCTGGGTTTCATACATTAGATATTGAGACGCTCCC	3648
SaigaPPRV	AATCAGTAACATCCAAACCTCTAGTCTGGGTTTCATACATTAGATATTGAGACGCTCCC	3648
Bharal_Tibet_PPRV	AATCAGTAACATCCAAACCTCTAGTCTGGGTTTCATACATTAGATATTGAGACGCTCCC	3648
Ovis_aries_PPRV	AATCAGTAACATCCAAACCTCTAGTCTGGGTTTCATACATTAGATATTGAGACACTCCC	3648
nubian_ibex_PPRV	AATCAGTAACATCCAAACCTCTAGTCTGGGTTTTCATACATTAGATATTGAGACACTCCC	3648
Measles_virus	AGTCAGTAATATCCCTACCTCTAGTGTGGGGTTTATCCATTAGATATAGAGACCTTACC	3648
Cattle_Rinderpest	CATCAGCAATATACAGACATCTAGCCTTGGCCTAATACACTCAGACATAGAAACCCTCCC	3648
Giraffe_Kenya_Rinderpest	CATCAGCAATATACAGACATCTAGCCTTGGCCTAGTACACTCGGACATAGAAACCCTCCC	3648
	* * * * *	
Hendra	AGACAAACAAGTGGAAAGAAATTATGATAGAGCAATTACACCTTATCTCAATAGCAATCAA	3708
Nipah_Virus	TGACAAAAATGTAGAGGAGATACTAGTAGAACATTCCCATCTAATATCTATCGCGATAAA	3708
FelisCatus_Hongkong_FeMV	AAGCAAGACGAAGAATAAAATTCTTGAGGAGCTGTGCCACATTCTGTCAATGGCACTCAT	3714
FelisCatus_Switzerland_FeMV	GAGCAAGACAAAAAATAAAATTCTTGAAGAGCTGTGCCATATCCTATCAATGGCACTTAT	3714
Porcine_morbillivirus_Swine_Mexico	TGACAAAGACGCTGTTGAGAACTAGAAAGAGCTTTCTGCAATCTTATCGACGGCCCTGAT	3708
Dolphin	AAATAAGGACCTAGTTGAAAAGCTGGAAGAATTAAGTCCATATTGTGCGATGACATTAT	3708
Pilot_Whale_CEMV	AACTAAAGACCCGGTTGAGAACTAGAGGAGTTGACTGCCATATTATCGATGACATTAT	3708
Canine_CDV	GGATAAAGACATAATTGAAAAGTTGGAAGAATTGTCTGCTATATTATCAATGACTTTGAT	3708
Ferret_Australia_CDV	GGATAAAGACATAATTGAAAAGTTGGAAGAATTGTCTGCTATATTATCAATGACTTTGAT	3708
Harbourseal_Netherlands_WaddenSeal_PDV	CAACAAAGATGCAATTGAAAAGTTAGAAGAACTGTCTGCCATCCTGTCTATGACTTTGAT	3708
GreySeal_Massachusetts_PhocineMorbillivirus	CAACAAAGATGCAATTGAAAAGTTAGAAGAACTGTCTGCCATCCTGTCTATGACTTTGAT	3708
Harp_Seal_Canada_PhocineMorbillivirus	CAACAAAGATGCAATTGAAAAGTTAGAAGAACTGTCTGCCATCCTGTCTATGACTTTGAT	3708
Siberian_Ibex_PPRV	AACCAAAGATGCTGTTGAGAAATTGGAGGAATTTGCCTCTATCCTATCCTTATCCTTGAT	3708
Goitered_gazelle_PPRV_Mongolia	AACCAAAGATGCTGTTGAGAAATTGGAGGAATTTGCCTCTATCCTATCCTTATCCTTGAT	3708
SaigaPPRV	AACCAAAGATGCTGTTGAGAAATTGGAGGAATTTGCCTCTATCCTATCCTTATCCTTGAT	3708
Bharal_Tibet_PPRV	AACCAAAGATGCTGTTGAGAAATTGAAGAATTTGCCTCTATCCTATCCTTATCCTTGAT	3708
Ovis_aries_PPRV	AACCAAAGACGCTGTTGAGAAATTGAAGAATTTGCCTCTATCCTATCCTTATCCTTGAT	3708
nubian_ibex_PPRV	AACCAAAGACGCTGTTGAGAAATTGAAGAATTTGCCTCTATCCTATCCTTATCCTTGAT	3708
Measles_virus	TAACAAAGATATATAGAGAAGCTAGAGGAATTTGGCAGCCATCTTATCGATGGCTCTACT	3708
Cattle_Rinderpest	TACAAAAGATATCACAGAGAAATTTGAAGAGTTGTGAGCTATCCTAGCGTTGGCTCTATT	3708
Giraffe_Kenya_Rinderpest	TACAAAAGATGTCACAGAGAAATTTGAAGAGTTATCAGCTATTCTAGCGTTGGCTCTATT	3708
	* * * * *	
Hendra	TGTAATGATAGAAGACGGGTGTTCTTGATCTAAAATAGCAATTTGCACCAGGGTTCCCAT	3768
Nipah_Virus	TGTTATGATGGAGGACGGACTATTAGTATCCAAGATAGCATAACCCCTGGATTCCCAAT	3768
FelisCatus_Hongkong_FeMV	TTTGGGGAAAATCGGATCTTTATTAGTTGTCAAGTTATTACCAAGGGTCGGTGACTATAC	3774
FelisCatus_Switzerland_FeMV	CTTAGGGAAACTCGGATCTGTGTTAGTTATTAAACTATTACCAAGAGTCGGTGATTATAC	3774
Porcine_morbillivirus_Swine_Mexico	ATTAGGCAAGGTTGGCTCAGTTTGTATTATCAAGATAATGCCCATAGCGGGGACTGGGT	3768
Dolphin	TTTAGGTAAATAGGATCTCTCCTAATAATCAAGATAATGCCGACAAGCGGGGACTTAGT	3768
Pilot_Whale_CEMV	TTTAGGCAAAAGTGGGCTCTCTCCTAGTGATCAAGATAATGCCAACAAGTGGGGACTTGGT	3768
Canine_CDV	ATTAGGGAAGGTAGGGTCAGTTAGTAATTAAGATCATGCCAGTTAGTGGCGACTGGGT	3768
Ferret_Australia_CDV	ATTAGGGAAGGTAGGGTCAGTTAGTAATTAAGATCATGCCAGTTAGTGGCGACTGGGT	3768
Harbourseal_Netherlands_WaddenSeal_PDV	TTTGGGCAAGGTAGGATCAGTTCTAGTAATTAAGATCATGCCAATGAGCGGTGACTGGGT	3768
GreySeal_Massachusetts_PhocineMorbillivirus	TTTGGGCAAGGTAGGATCAGTTCTAGTAATTAAGATCATGCCAATGAGCGGTGACTGGGT	3768
Harp_Seal_Canada_PhocineMorbillivirus	TTTGGGCAAGGTAGGATCAGTTCTAGTAATTAAGATCATGCCAATGAGCGGTGACTGGGT	3768
Siberian_Ibex_PPRV	TTTGGGGAAAATCGGCTCTATTACAGTTGTCAAAATTATGCCCATAGCGGGGATTTTAC	3768

Goitered_gazelle_PPRV_Mongolia	TTTGGGAAAAATCGGCTCTATTACAGTTGTCAAAATTATGCCCATTAGCGGGGATTTTAC	
	3768	
SaigaPPRV	TTTGGGAAAAATCGGCTCTATTACAGTTGTCAAAATTATGCCCATTAGCGGGGATTTTAC	3768
Bharal_Tibet_PPRV	TTTGGGAAAAATCGGCTCTATTACAGTTGTCAAAATTATGCCCATTAGCGGGGATTTTAC	3768
Ovis_aries_PPRV	TTTGGGAAAAATCGGCTCTATTACAGTTGTCAAAATTATGCCCATTAGCGGGGATTTTAC	3768
nubian_ibex_PPRV	TTTGGGAAAAATCGGCTCTATTACAGTTGTCAAAATTATGCCCATTAGCGGGGATTTTAC	3768
Measles_virus	CCTTGGCAAAATAGGATGCAATACTGGTGCAGAGTTCTATCAGCAAAAGTTCTTAATATTACCTAG	3768
Cattle_Rinderpest	GCTAGGTAAGGTAGGTTGAGTATTGGTTATCAAAGTAATGCCTATAAGTGGAGACTATGT	3768
Giraffe_Kenya_Rinderpest	GCTGGCAAGGTAGGTTGAGTATTGGTTATCAAAGTAATGCCTATAAGTGGAGACTATGT	3768
	* * * * *	
Hendra	ATCCAGGCTACTGAATATGTATCGTTCCTATTTTGGGTTAGTATTGGTGTGTTTCCAGT	3828
Nipah_Virus	CTCAAGATTATTTAACATGTACAGATCATATTCGGACTAGTACTGGTGTGTTTCCAGT	3828
FelisCatus_Hongkong_FeMV	GTATTCATTTTGCAGGTATGCATCGGAATCTATCAACAAAGCCTCCTTGTTTTACCTAG	3834
FelisCatus_Switzerland_FeMV	CTATTCATTTTGCAGGTATGCATCGGAATCTATCAACAAAGCCTCCTTGTTTTACCTAG	3834
Porcine_morbillivirus_Swine_Mexico	ACAGGGTTTCATAAAATTCGCACTCGTGCATTATCTTAAAGGGATAATAATTTACCCGAG	
	3828	
Dolphin	TCAAGGATTCATCGGATACACCACTCTTTTGTAGAGAGAGCATTATTGTATACCCTAG	3828
Pilot_Whale_CEMV	TCAAGGGTTTCATCGGATACCACTCCGTATTTTTCAGAAGAAGCACTATTATCTACCCTAG	3828
Canine_CDV	TCAAGGATTTATTTGTATGCACTCCCACATTTTCTTCGAAGTTTCATAGTTTACCCAAG	3828
Ferret_Australia_CDV	TCAAGGATTTATTTGTATGCACTCCCACATTTTCTTCGAAGTTTCATAGTTTACCCAAG	3828
Harbourseal_Netherlands_WaddenSeal_PDV	TCAAGGTTTATCTTTATACACTCCACATTTTCTTCAGAGTTTCATAGTTTACCCTAG	
	3828	
GreySeal_Massachusetts_PhocineMorbillivirus	TCAAGGTTTATCTTTATACACTCCACATTTTCTCCAGAGTTTCATAGTTTACCCTAG	
	3828	
Harp_Seal_Canada_PhocineMorbillivirus	TCAAGGTTTATCTTTATACACTCCACATTTTCTCCAGAGTTTCATAGTTTACCCTAG	
	3828	
Siberian_ibex_PPRV	CCAAGGCTTCATAGCCTATGCCATCCAATATTTTAGGGAGAGCCTGCTTGCTATCCGAG	3828
Goitered_gazelle_PPRV_Mongolia	CCAAGGCTTCATAGCCTATGCCATCCAATATTTTAGGGAGAGCCTGCTTGCTATCCGAG	
	3828	
SaigaPPRV	CCAAGGCTTCATAGCCTATGCCATCCAATATTTTAGGGAGAGCCTGCTTGCTATCCGAG	3828
Bharal_Tibet_PPRV	CCAAGGCTTTTATAGCCTATGCCATCCAATATTTTAGGGAGAGCCTGCTTGCTATCCGAG	3828
Ovis_aries_PPRV	CCAAGGTTTCATAGCCTATGCTATCCAATATTTTAGGGAGAGCCTGCTTGCTATCCGAG	3828
nubian_ibex_PPRV	CCAAGGCTTCATAGCCTATGCTATCCAATATTTTAGGGAGAGCCTGCTTGCTATCCGAG	3828
Measles_virus	TCAGGGATTTATAAGCTATGTAGGCTCTCATTATAGAGAAGTGAACCTTGCTACCCCTAG	3828
Cattle_Rinderpest	CCAGGGGTTTCATGAGTTATGCTGCTTATTACAGAGAGGTACTCATCATCTACCCGAG	3828
Giraffe_Kenya_Rinderpest	CCAGGGGTTTCATGAGTTATGCTGCTTATTACAGAGAGGTACTCATCATCTACCCGAG	3828
	* * * * *	
Hendra	GTATAGTAATCCAGAGTCCACAGAAGTGTATCTCATCTGCTTGCAGAAAACAATTAAGAC	3888
Nipah_Virus	ATATAGTAATCCAGATTCTACTGAAGTATATCTTCTTTCCTTACAGAAGACGGTCAAGAC	3888
FelisCatus_Hongkong_FeMV	GTTTAGTAACATGTCATCATCTGAGGTTTACTATATAGGGATTACCTCAATACAAATCG	3894
FelisCatus_Switzerland_FeMV	ATTTAGTAACATATCGTCACTCTGAAATTTACTACATAGGAGTTACCTTAATACAAATAG	3894
Porcine_morbillivirus_Swine_Mexico	GTACAGTAATTATGTGTCAACTGAGGCCTATTTAGTATTCCAAGGAATGCGAGCTAGCAG	
	3888	
Dolphin	ATACAGTAACCTTTATCTCCACTGAGTGTTATCTAGTATTTGTTGGGCTTAAGTACAATAG	3888
Pilot_Whale_CEMV	ATACAGCAACTTTATCTCTACTGAGTGTTACCTGGTATTTATTTGGGCTTAAGTGAATAG	3888
Canine_CDV	ATACAGCAATTTTGTGTCAACAGAGGCCTACCTTGTTTTTACCGGTCTTAGAGCAGGGAG	3888
Ferret_Australia_CDV	ATACAGCAATTTTGTGTCAACAGAGGCCTACCTTGTTTTTACCGGTCTTAGAGCAGGGAG	3888
Harbourseal_Netherlands_WaddenSeal_PDV	ATATAGCAATTTTGTATCCACAGAGGCATATCTCGTTTTTATAGGACTAAGGGCAGGGAG	3888
GreySeal_Massachusetts_PhocineMorbillivirus	ATATAGCAATTTTGTATCCACAGAGGCATATCTCGTTTTTATAGGACTAAGGGCAGGGAG	
	3888	
Harp_Seal_Canada_PhocineMorbillivirus	ATATAGCAATTTTGTATCCACAGAGGCATATCTCGTTTTTATAGGACTAAGGGCAGGGAG	
	3888	
Siberian_ibex_PPRV	ATATAGTAACTTCATCTCGACTGAGTGTTACCTTATTATGATAGGATTAAAGGCCAATCG	3888
Goitered_gazelle_PPRV_Mongolia	ATATAGTAACTTCATCTCGACTGAGTGTTACCTTATTATGATAGGATTAAAGGCCAATCG	
	3888	
SaigaPPRV	ATATAGTAACTTCATCTCGACTGAGTGTTACCTTATTATGATAGGATTAAAGGCCAATCG	3888
Bharal_Tibet_PPRV	ATATAGTAACTTCATCTCGACTGAGTGTTACCTTATTATGATAGGATTAAAGGCCAATCG	3888
Ovis_aries_PPRV	ATATAGTAACTTCATCTCGACTGAGTGTTACCTTATTATGATAGGATTAAAGGCCAATCG	3888
nubian_ibex_PPRV	ATATAGCAACTTCATCTCGACTGAGTGTTACCTTATTATGATAGGATTAAAGGCCAATCG	3888
Measles_virus	GTACAGCAACTTCATATCTACTGAATCTTATTTAGTTATGACAGATCTCAAAGCTAACCG	3888
Cattle_Rinderpest	ATATAGTAACTTCATATCAACTGAGGCATATCTAGTCCTGTTGGGACTCAGGGCCAATAG	3888
Giraffe_Kenya_Rinderpest	ATATAGTAACTTCATATCGACTGAGGCATATCTAGTCCTGTTAGGACTCAAGGCCAATAG	3888
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Hendra	CATAATCCACCTCAAAAAGTTCTTGATCATTCATATCTCAGTGATGAAATCAATGATCA	3948
Nipah_Virus	TATTGTTCCCCCGCAAAAAGTCTTGAGCACTCAATTTGCACGATGAAGTCAATGACCA	3948
FelisCatus_Hongkong_FeMV	ATTGATTGATCCTGACAGAATAGTACAATACATAGTTAGAAATTTACAACCACTCCAGT	3954
FelisCatus_Switzerland_FeMV	ATTGATCGATCTGACAGAATAGTACAATACATAATTAGAAATTTGCAACCTACCCAGT	3954
Porcine_morbillivirus_Swine_Mexico	ACTGGTTAATCCCGAGGGAATCAAACAGCAGATTATGAGGATAGGAGTAAGGACAACACC	
	3948	
Dolphin	ATTAATCAACCCTGAAGGAATAAAACAACAATAAAATTTAGGCATAAGAACATCACC	3948
Pilot_Whale_CEMV	ACTAATCAACCCCGAAGGAATAAAACAACAATAACTCAAGTTGAGCACAAGAACATCACC	3948
Canine_CDV	ACTAATCAATCCTGAGGGGATTAAACAACAGATTTTGCGAGTCGGTATTCGAACCTCACC	3948
Ferret_Australia_CDV	ACTAGTCAATCCTGAGGGGATTAAACAACAGATTTTGCGAGTCGGTATTCGAACCTCACC	3948
Harbourseal_Netherlands_WaddenSeal_PDV	ATTAGTCAATCCTGAGGGGATCAAGCAACAGATTATAAGGATTGGTATTTCGAACATCACC	3948

GreySeal\_Massachusetts\_PhocineMorbillivirus

3948

ATTAGTCAATCCTGAGGGGATCAAGCAACAGATTATAAGGATCGGTATTCTGAACATCACC

Harp\_Seal\_Canada\_PhocineMorbillivirus      ATTAGTCAATCCTGAGGGGATCAAGCAACAGATTATAAGGATCGGTATTCTGAACATCACC

3948

Siberian\_Ibex\_PPRV      ATTAATAAACCCAGAAGCCATTAAGCAAAGCATAATCAGAGCGGGGGTCAGGACTGCACC      3948

Goitered\_gazelle\_PPRV\_Mongolia      ATTAATAAACCCAGAAGCCATTAAGCAAAGCATAATCAGAGCGGGGGTCAGGACTGCACC

3948

SaigaPPRV      ATTAATAAACCCAGAAGCCATTAAGCAAAGCATAATCAGAGCGGGGGTCAGGACTGCACC      3948

Bharal\_Tibet\_PPRV      ACTGATAAACCCAGAAGCCATTAAGCAAAGCATAATCAGAGCGGGGGTCAGGACTGCACC      3948

Ovis\_aries\_PPRV      ATTGATAAACCCAGAAGCCATTAAGCAAAGCATAATCAGAGCGGGGGTCAGGACTGCACC      3948

nubian\_ibex\_PPRV      ATTGATAAACCCAGAAGCCATTAAGCAAAGCATAATCAGAGCGGGGGTCAGGACTGCACC      3948

Measles\_virus      GCTAATGAATCCTGAAAAGATCAAGCAGCAGATAATTGAATCATCTGTGCGGACTTCACC      3948

Cattle\_Rinderpest      ACTGATAGATCCTGAAAGAAATTAACAACAGGTGATGGAATCCGGGATCAGAACTATCCC      3948

Giraffe\_Kenya\_Rinderpest      ACTGATAGATCCTGAAAGAAATTAACAACAGGTGATGGAATCCGGGATCAGAACTACCCC3948

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Hendra      AGGTATTACATCTGTTATTTTCAAGATCAAAAACATTCAATCAAAAACAATTCCATGAAGA      4008

Nipah\_Virus      GGGAATAACATCAGTGATTTTAAATAAAGCAATTCACAGTCTAAGCAGTTCCACGATGA      4008

FelisCatus\_Hongkong\_FeMV      TACATTTTTGTCCTATATTTTGAATAAGTATAGAAATAATATGGTTACAAATTATGG      4014

FelisCatus\_Switzerland\_FeMV      TACATTTTTATCCTATATCTTTGAGACTAAATATAGAAATAATATGGTTACAAATTATGG      4014

Porcine\_morbillivirus\_Swine\_Mexico      TGGATTGGTATGTCATATCCTCTCCAGAAAACAAGACACGTGTGTCCAAGCCTACATGGG

4008

Dolphin      GGGATTGTAGCACATTTGTTATCTATGAAGCAAGCAAACCTACCTACAATCCCTTATTGG      4008

Pilot\_Whale\_CEMV      AGGGTTTGTGGCACACTTACTTTCTATAAAGCAATCAAGCTGTATACAATCCCTTGTGG      4008

Canine\_CDV      CGGGTTGGTAGGGCACATCCTTTTCATCAAAGCAGACAGCATGTGTGCAGTCTTTGCATGG      4008

Ferret\_Australia\_CDV      CGGGTTGGTAGGGCACATCCTTTTCATCAAAGCAGACAGCATGTGTGCAGTCTTTGCATGG      4008

Harbourseal\_Netherlands\_WaddenSeal\_PDV

TGGGTTAGTTGGGCATATCCTATCAACAAAGCAGACAACATGTATTCAATCATTACATGG      4008

GreySeal\_Massachusetts\_PhocineMorbillivirus      TGGGTTAGTTGGGCATATCCTATCAACAAAGCAGACAACATGTATTCAATCATTACATGG

4008

Harp\_Seal\_Canada\_PhocineMorbillivirus      TGGGTTAGTTGGGCATATCCTATCAACAAAGCAGACAACATGTATTCAATCATTACATGG

4008

Siberian\_Ibex\_PPRV      AGGACTTGTGAGCCATGTATTATCAGAGAAACAAAAAGGTTGTATTCAATCTTTCTTGGG      4008

Goitered\_gazelle\_PPRV\_Mongolia      AGGACTTGTGAGCCATGTATTATCAGAGAAACAAAAAGGTTGTATTCAATCTTTCTTGGG

4008

SaigaPPRV      AGGACTTGTGAGCCATGTATTATCAGAGAAACAAAAAGGTTGTATTCAATCTTTCTTGGG      4008

Bharal\_Tibet\_PPRV      AGGACTTGTGAGCCATATATTATCAGAGAAACAGAAAGGTTGTATTCAATCTTTCTTGGG      4008

Ovis\_aries\_PPRV      AGGACTTGTGAGCCATATATTATCAGGGAACAGAAAGGTTGTATTCAATCTTTCTTGGG      4008

nubian\_ibex\_PPRV      AGGACTTGTGAGCCATATATTATCAGAGAAACAGAAAGGTTGTATTCAATCTTTCTTGGG      4008

Measles\_virus      TGGACTTATAGGTCACATCCTATCCATTAAGCAACTAAGCTGCATACAAGCAATTGTGGG      4008

Cattle\_Rinderpest      CGGTTTGTAGCGGACATATATTATCCATCAAGCAAGCTCAATTGTCATACAAAGCCAGCGGG      4008

Giraffe\_Kenya\_Rinderpest      CGGTTTGTAGCGGACATATACTATCCGTTAAGCAATTCAACTGCATACAGAGCCAAGTGGG      4008

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Hendra      TCTAGTGAAACACTATCAGGTGCAACAACCGTTTTTTTGTTCCTAGTCATATCACATGTGA      4068

Nipah\_Virus      TCTAAAGAAGTACTATCAGATTGACCAACCTTTTTTTGTACCAACTAAAATCACTAGTGA      4068

FelisCatus\_Hongkong\_FeMV      -----ACTGTGCTTGTGACACGGACACAAAAGTGATTACCTGTCATCAATTACAAAAAT      4068

FelisCatus\_Switzerland\_FeMV      -----ATTATGCTTGGCAGATGGACATAAAAGTGATTACTTATCATCAATTACAAAGAT      4068

Porcine\_morbillivirus\_Swine\_Mexico      -----AGTACCGTTTACCAACGAAGGGTTCAATCCTAATCTGAGGTCCCTAACACCTAT      4062

Dolphin      -----ACTCCCTGTTTCAGAAAGGATTCTTTAATAGAGTGTGAGTGGGTTGACCCCGAT      4062

Pilot\_Whale\_CEMV      -----ACCCCTGTTTCAGAAAGGGTGCTTTAATCAAGTATTAATGGGTTGACCCCGAT      4062

Canine\_CDV      -----ACCTCCATTTTCATGCTAAATCTTTCAATCCTCACCTTCAGGGTTTAAACAAGTAT      4062

Ferret\_Australia\_CDV      -----ACCTCCATTTTCATGCTAAATCTTTCAATCCTCACCTTCAGGGTTTAAACAAGTAT      4062

Harbourseal\_Netherlands\_WaddenSeal\_PDV      -----GCCTCCTTTTACAAATAGATCTCTGAACCCCTTACCTAAGAAGCTTGACGTGCAT

4062

GreySeal\_Massachusetts\_PhocineMorbillivirus      -----GCCTCCTTTTACAAATAGATCTCTGAACCCCTTACCTAAGAAGCTTGACGTGCAT

4062

Harp\_Seal\_Canada\_PhocineMorbillivirus      -----GCCTCCTTTTACAAATAGATCTCTGAACCCCTTACCTAAGAAGCTTGACGTGCAT4062

Siberian\_Ibex\_PPRV      -----TGATCCTTATATCCAAGGAGACTTCAATAAGCACCTTAAATCTCTAACCTCTAT      4062

Goitered\_gazelle\_PPRV\_Mongolia      -----TGATCCTTATATCCAAGGAGACTTCAATAAGCACCTTAAATCTCTAACCTCTAT      4062

SaigaPPRV      -----TGATCCTTATATCCAAGGAGACTTCAATAAGCACCTTAAATCTCTAACCTCTAT      4062

Bharal\_Tibet\_PPRV      -----TGATCCTTATATCCAAGGAGACTTCAATAAGCACCTTAAATCTCTGACCCCTAT      4062

Ovis\_aries\_PPRV      -----TGATCCTTATATCCAAGGAGACTTCAATAAGCACCTTAAATCTCTAACCCCTAT      4062

nubian\_ibex\_PPRV      -----TGATCCTTATATCCAAGGAGACTTCAATAAGCACCTTAAATCCCTAACCCCTAT      4062

Measles\_virus      -----AGGCGCAGTTAGTAGAGGTGATATCAACCCCTATTCTGAAAAAACTTACACCTAT      4062

Cattle\_Rinderpest      -----GCCAGCTATCACTAGAGGTGAGATAAACCCGATATTAAGAAAGCTCACACCTAT      4062

Giraffe\_Kenya\_Rinderpest      -----CCCAGCCATCACTAGAGGCGAGATAAACCCGATATTAAGAAAGCTCACATCTAT      4062

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Hendra      TGAAAAGTTGCTTATGCAGGCTGGTTTGAAGTGAACGACAGAAATCTTGAAGAATGA      4128

Nipah\_Virus      TGAACAAGTACTTCTCCAAGCAGGGCTGAAACTCAATGGGCCAGAAATCTTAAAGAGTGA      4128

FelisCatus\_Hongkong\_FeMV      AGAGAACGTTCTTCTGTCTATGTGGGTTAGAATTGAATGGACCTAAGATTATACAGCAATT

4128

FelisCatus\_Switzerland\_FeMV      AGAGAATGTTCTTCTGTCTATGTGGATTAGAATTGAATGGACCTAAGATTATTCAGCAATT      4128

Porcine\_morbillivirus\_Swine\_Mexico      TGAGAAAAGTCTTGGTGAAGTGTGGTTTTCTGTCAATGGAGACAAGGTCTGTGCGACTCT

4122

Dolphin      TGAAAAAGTTCTTATTAATTGCGGGTTAACTGTGAACGGGCCCAAGGTATGTAAGAACTT      4122

Pilot\_Whale\_CEMV      TGAGAAAAGTTCTTATTAATTGCGGGCTAACTGTAAACGGGCCCTAAGGTATGTAAAACTT      4122

Canine\_CDV      TGAGAAAGTATTAATCAATTGTGGGCTTACAATTAATGGTCTTAAAGTATGTAAGAACTT      4122

Ferret_Australia_CDV	TGAGAAGGTATTAATCAATTGTGGGCTTACAATTAATGGTCTTAAAGTATGTAAGAACCT	4122
	Harbourseal_Netherlands_WaddenSeal_PDV	
	AGAGAAAGTGTTAATCAATTGTGGGCTTACAATTAATGGCCTAAAGGTGTGCAAGAATCT	4122
	GreySeal_Massachusetts_PhocineMorbillivirus	
	AGAGAAAGTGTTAATCAATTGTGGGCTTACAATTAATGGCCTAAAGGTGTGCAAGAATCT	4122
Harp_Seal_Canada_PhocineMorbillivirus	AGAGAAAGTGTTAATCAATTGTGGGCTTACAATTAATGGCCTAAAGGTGTGCAAGAATCT	4122
Siberian_Ibex_PPRV	TGAGAAAATCCTGGTAAATTGTGGTCTCTCGATCAATGGCATAAAAAATCTGTAGAGATCT	4122
Goitered_gazelle_PPRV_Mongolia	TGAGAAAATCCTGGTAAATTGTGGTCTCTCGATCAATGGCATAAAAAATCTGTAGAGATCT	4122
SaigaPPRV	TGAGAAAATCCTGGTAAATTGTGGTCTCTCGATCAATGGCATAAAAAATCTGTAGAGATCT	4122
Bharal_Tibet_PPRV	TGAGAAAATCCTGGTAAATTGTGGTCTCTCGATCAATGGCATAAAAAATCTGTAGAGATCT	4122
Ovis_aries_PPRV	TGAGAAAATCCTGGTAAATTGTGGTCTCTCGATCAATGGCATAAAAAATCTGTAGAGATCT	4122
nubian_ibex_PPRV	TGAGAAAATCCTGGTAAATTGTGGTCTCTCGATCAATGGCATAAAAAATCTGTAGAGATCT	4122
Measles_virus	AGAGCAGGTGCTGATCAGTTGCGGGTTGGCAATTAACGGACCTAAACTGTGCAAAGAATT	4122
Cattle_Rinderpest	CGAGCGTATTCTGATCAGCTGCGGGCTTACCATCAACGGCACAAGATTTCAGTGTATGT	4122
Giraffe_Kenya_Rinderpest	TGAGCGTATTCTGATCAATTGCGGGCTCACTATCAATGGCACCAAGATTTCAGCGATAT	4122

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Hendra	AGTGGGATATGATATAGGATCAGATATCAATACACTCAGGA-----GCACTATTATTATC	4183
Nipah_Virus	AATCAGTTATGATATCGGTTTCAGATATCAATACATTAAGAG-----ACACCATCATAATT	4183
FelisCatus_Hongkong_FeMV	ATCAGGACATGACTATGCTAATGGGGAGACTAGTCTAGAATCA-----AGTATAATG	4180
FelisCatus_Switzerland_FeMV	ATCAGGACA-----TGACTATGCAAATGGGGAGACTAGCCTGGAATCAAGTATAATG	4180
Porcine_morbillivirus_Swine_Mexico	GCTACATCATGATATAGTGTCAAGGGTGCGAAGGTTTAACAA-----ATGCAGTGATAATC	4177
Dolphin	AGTACATCATGATATCGCGTCTGGATCAGAGGGTCTTGTC-----ACTCAACTGTTATT	4177
Pilot_Whale_CEMV	AGTACATCATGATATTGCTATCGGGTCAGAGGGACTTGTC-----ACTCAACTGTTATT	4177
Canine_CDV	GCTTCACCATGATATTTCTGTCAGGCGAGGAAGGGCTGAAAG-----GATCTATCACGATC	4177
Ferret_Australia_CDV	GCTTCACCATGATATTTCTGTCAGGCGAGGAAGGGCTGAAAG-----GATCTATCACGATC	4177
Harbourseal_Netherlands_WaddenSeal_PDV	GTTCCATCATGACATCTCATCAGGTGAAGAAGGGCTAAAAG-----GTTCAATTATAATT	4177
GreySeal_Massachusetts_PhocineMorbillivirus	GTTCCATCATGACATCTCATCAGGTGAAGAAGGGCTAAAAG-----GTTCAATTATAATT	4177
Harp_Seal_Canada_PhocineMorbillivirus	GTTCCATCATGACATCTCATCAGGTGAAGAAGGGCTAAAAG-----GTTCAATTATAATT	4177
Siberian_Ibex_PPRV	AATCCACCATGATATCGCCTCCGGTCCAGACGGCCTTATGA-----GCTCTACAATTATT	4177
Goitered_gazelle_PPRV_Mongolia	AATCCACCATGATATCGCCTCCGGTCCAGACGGCCTTATGA-----GCTCTACAATTATT	4177
SaigaPPRV	AATCCACCATGATATCGCCTCCGGTCCAGACGGCCTTATGA-----GCTCTACAATTATT	4177
Bharal_Tibet_PPRV	AATCCACCATGATATCGCCTCCGGTCCAGACGGTCTTATGA-----GCTCTACAATTATT	4177
Ovis_aries_PPRV	AATCCACCATGATATCGCCTCCGGTCCAGACGGTCTTATGA-----GCTCTACAATTATT	4177
nubian_ibex_PPRV	AATCCACCATGATATTGCCTCCGGTCCAGACGGTCTTATGA-----GCTCTACAATTATT	4177
Measles_virus	AATCCACCATGATGTTGCCTCAGGGCAAGATGGATTGCTTA-----ACTCTATACTCATC	4177
Cattle_Rinderpest	AGTCCACCATGATATATCATCAGGGCCGGACGGTCTGCTTA-----ATTCTTCTATCATT	4177
Giraffe_Kenya_Rinderpest	AGTCCACCATGATATATCTCAGGGTCCGACGGTCTGCTTA-----ATTCTTCTATCATT	4177

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Hendra	TTACT---	4188
Nipah_Virus	ATGTT---	4188
FelisCatus_Hongkong_FeMV	ATATTAGT	4188
FelisCatus_Switzerland_FeMV	ATATTAGT	4188
Porcine_morbillivirus_Swine_Mexico	CTATA---	4182
Dolphin	TTATA---	4182
Pilot_Whale_CEMV	CTATA---	4182
Canine_CDV	CTTTA---	4182
Ferret_Australia_CDV	CTTTA---	4182
Harbourseal_Netherlands_WaddenSeal_PDV	CTTTA---	4182
GreySeal_Massachusetts_PhocineMorbillivirus	CTTTA---	4182
Harp_Seal_Canada_PhocineMorbillivirus	CTTTA---	4182
Siberian_Ibex_PPRV	TTATA---	4182
Goitered_gazelle_PPRV_Mongolia	TTATA---	4182
SaigaPPRV	TTATA---	4182
Bharal_Tibet_PPRV	TTATA---	4182
Ovis_aries_PPRV	TTATA---	4182
nubian_ibex_PPRV	TTGTA---	4182
Measles_virus	CTCTA---	4182
Cattle_Rinderpest	CTGCT---	4182
Giraffe_Kenya_Rinderpest	CTGCT---	4182

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