CLUSTAL O(1.2.4) multiple sequence alignment

Hendra AATTT	57	AGGACCCAAGTCCTTTAAACGTGCATGATTGAGATAGTCAGAAATTGGAGCT
Nipah AGACT	60	$\tt AGGACCCAGGTCCTTGATTATGCCAATTTTCTCGAGAAATCATTCAATTGACCAT$
Ninivent	cer	
Berylmys	0	
 Gierle	0	
 Feline	0	
Dolphin	0	
	0	
Saiga_ar	0	
Goitered	d_gazelle, O	
Domestic	c_sheep, O	
Wild_goa	at,	
Bharal,	0	
Domestic	0 c_goat,	
 Measles	0	
 Rinderpe	0	
	0	
	_distemper_north_sea 0	
Phocine_	_distemper_caspian_sea, 0	
Dog_can:	ine_distemper 0	
Ferret,		
Porcine	0	
 Phyllost	O comus	
	0	
Hendra	115	GAAT-ACTAGT-GAGTAAATTAGGAGTAGTAGTATTGAACCACCTCATATCTTAT
TTCTT Nipah	115	GAAAGCGTTGTTACCTAGTTCTTCAGAAGAGATCTTATTAGAATTAATTT
ATATG Ninivent	115 ter	
 Berylmys	0	
	0	
Gierle 	0	
Feline	0	
Dolphin	0	
Saiga_aı	ntelope,	
Goitered	0 d_gazelle,	
 Domestic	0 c_sheep,	
	0	

alignments.txt Wed Dec	18 07:53:28 2024 2
Wild_goat,	
Bharal, 0	
Domestic_goat,	
0 Measles	
0 Rinderpest	
0 Phocine_distemper_north_sea	
O	
Phocine_distemper_caspian_sea, 0	,
Dog_canine_distemper 0	
Ferret,	
Porcine	
0 Phyllostomus	
0	
Hendra TATCT 175	CTGAACTGCATTAAAATTTGTACCCAGGATATAACAACATGGCTCATGAATTATC
Nipah	ATCTAATTCCCTTAAAAACTGAATACCAAAAAACAAAAATGGCCGATGAATTATC
AATAT 175 Niniventer	ATGATGGATTCCCTTACCGATGATGGCTC
AATTC 34 Berylmys	ATGTCTGACTTGGATGATGTTACGTCATC
AGTGG 34 Gierle	
GGTAT 34	ATGTTCGGCCCTGAAGAGCTCTCGGATTC
Feline CTACC 41	AGGAGTCAGAGACTTCGTTGCAATGGAGCAGTCAGA
Dolphin AATCA 19	ATGGAGTCCATCTC
Saiga_antelope, AGTCA 19	ATGGACTCTCTATC
Goitered_gazelle,	ATGGACTCTATC
AGTCA 19 Domestic_sheep,	ATGGACTCCCTATC
AGTCA 19 Wild_goat,	ATGGACTCCCTATC
AGTCA 19 Bharal,	ATGGACTCCCTATC
AGTCA 19	ATGGACTCCCTATC
Domestic_goat, AGTCA 19	
Measles TGTCA 41	AGGGTCCAAGTGGTTTCCCGTTATGGACTCGCTATC
Rinderpest TGTTA 19	ATGGACTCCCTCTC
Phocine_distemper_north_sea	AGGATCCAGGATCCTTTTAACCATGGACTCCGTATC
Phocine_distemper_caspian_sea,	,ATGGACTCTGTC
AGTGA 19 Dog_canine_distemper	ATGGACTCTGTATC
AGTGA 19 Ferret,	ATGGACTCTGTATC
AGTGA 19 Porcine	ATGGACTCTATCTC
AGTTA 19	
Phyllostomus GGTGA 19	ATGGAGTCCATATC

```
Hendra
        235
GATTT
Nipah
AATAT
        235
Niniventer
CGTAG
Berylmys
GGTTT
Gierle
TGTCT
        94
Feline
AGTAG
        101
Dolphin
        79
AGTAG
Saiga_antelope,
AGTTG
       79
Goitered_gazelle,
AGTTG
       79
Domestic_sheep,
AGTTG
        79
Wild_goat,
AGTTG
       79
Bharal,
       79
AGTTG
Domestic_goat,
        79
AGTTG
Measles
AGTAG
        101
Rinderpest
GGTTG
        79
Phocine_distemper_north_sea
AGTTG
      101
Phocine_distemper_caspian_sea,
AGTAG
        79
Dog_canine_distemper
AGTAT
        79
Ferret,
        79
AGTAT
Porcine
AGTAG
        79
Phyllostomus
```

TGTGG Hendra AACTG 295 Nipah GTCTG 295 Niniventer TGTGG 154 Berylmys GATCA 154 Gierle TGTGA 154 Feline TATCA 161 Dolphin GACAA 139 Saiga_antelope, TGTCA 139 Goitered_gazelle, 139 TGTCA Domestic_sheep, TGTCA 139 Wild_goat,

CTGATATCATCTTGAATGTCACCTTGACAGTCCTATAGTATCAGGGAAATT CCGACATCATTTACCCTGAATGTCATTTGGATAGTCCTATAGTCTCTGGTAAACT AACAAATATTATATCCAGAAGTACATCTAGATAGTCCCATTGTCACTGCTAAAAT CTTCTATCATTTATCCAGAAGTACATCTAGACAGCCCTATAGTTACATCTAAATT CTTCTGTTATCTACCCCGAGGTCCATCTTGACAGTCCTATAGTTACATCCAAGCT AAGATATTCTATACCCGGAAGTACATCTTAACAGTCCTATAGTAATTTCCAAATT ACCAGATCCTATACCCTGAAGTGCACCTGGATAGTCCTATAGTCACTAATAAGTT ACCAGATCTTATACCCTGAAGTTCACCTAGATAGCCCGATAGTTACCAATAAGAT ACCAAATTTTGTACCCGGAGGTGCACCTTGATAGCCCGATAGTGACTAACAAGCT ATCAAATTTTGTATCCAGAAGTTCATTTAGACAGTCCAATTGTGACCAACAAGTT ACCAGATTCTATACCCTGAGGTCCATCTAGATAGCCCAATTGTAACCAATAAGCT ACCAGATTCTATACCCTGAGGTCCATCTAGATAGCCCAATTGTAACCAATAAGCT ACCAGATTCTATACCCTGAGGTCCATCTAGATAGCCCAATTGTAACCAATAAGCT ACCAGATTCTCTACCCGGAAGTTCATCTCGACAGCCCCATCGTGACCAATAAGTT ATCAAATTCTCTACCCTGAAGTTCACTTAGACAGTCCGATCGTGACTAATAAGCT

CAGCTATAGAATATGCGCAGTTGAGACATAACCAACCGAATGGGGACAAGAGATT
CAGCTATTGAATATGCTCAATTGAGACACAATCAGCCCAGTGATGATAAAAAGACT
CCTATCTAGAATATGCAGGAGTACCACACACCAAACTCTACATGATCTAACAAT
ATCACTTGGAGTATGCTGAGCTGCCTCACAATCAACATCTGTATGATCAAACATT
ACCATCTTGAATATGCAGGACTGACTTATAACCAGGAACTGTTAGACCCTACAAT
GTATTTTAGAATACGCCCAAATTGCTCATAATCAACAATTATCAGACCGTACAAT
CTATACTGGAGTACTCTCGGGTAACCCATGGGTACATTCTGGAGGATCAGACATT
CCATCCTTGAGTACTCGGGTATCGACCATAACTATGTTCTTGAAGACCAGACTCT
CCATCCTTGAGTACTCGGGTATCGACCATAACTATGTTCTTGAAGACCAGACCCT
CCATCCTTGAGTACTCGGGTATCGACCATAACTATGTTCTTGAAGACCAGACCCT

* *

TGTCA 139 Bharal, TGTCA 139 Domestic_goat, TGTCA 139 Measles GTGTC 161 Rinderpest CTGCA Phocine_distemper_north_sea AGTGC Phocine_distemper_caspian_sea, AGTGC 139 Dog_canine_distemper AGTGC 139 Ferret, AGTGC 139 Porcine TATTG 139 Phvllostomus AATTG 139

CCATCCTTGAGTACTCGGGTATCGACCATAACTATGTTCTTGAAGACCAGACCCT
CCATCCTTGAGTACTCGGGTATCGACCATAACTATGTTCTTGAAGACCAGACCCT
CTATCCTGGAGTATGCTCGAGTCCCTCACGCTTACAGCCTGGAGGACCCTACACT
CCATATTAGAGTATGCCCGGATCCCACATAAGTACGTCCTCGAGGATCCAACTCT
CTATTCTTGAGTATGCGCGGATTAAGCACAACTACCAACTCACTGATACCACATT
CTATTTTAGAATACGCACGAATTAGACATAGCTATCAACTCCTTGATACAACATT
CTATTTTAGAATACGCACGAATTAGACATAACTATCAGCTCCTTGATACAACATT
CTATTTTAGAATACGCACGAATTAGACATAACTATCAGCTCCTTGATACAACATT
CTATCCTAGAGTATGCCAATCTAAAACATACCAACTACCAGTTGATAGACCCGACCCT
GAATCCTAGAATACGCAAACTTAAAACATAACTACCAATTGACCGATCCTACTAT

Hendra ATCTA 355 Nipah 355 ATCCA Niniventer ATCAC 214 Berylmys AGTAC 214 Gierle AGCAA 214 Feline ATCAG 221 Dolphin CCTCG 199 Saiga_antelope, CAGGG 199 Goitered_gazelle, CAGGG 199 Domestic_sheep, CAGGG 199 Wild_goat, CAGGG 199 Bharal, CAGGG 199 Domestic_goat, CAGGG 199 Measles 221 TGTGG Rinderpest TGTTG 199 Phocine_distemper_north_sea CATAG 221 Phocine_distemper_caspian_sea, CATCG 199 Dog_canine_distemper

CATCG

Ferret, CATCG

Porcine

Phyllostomus

TGTTA 199

TATCA

199

199

199

AAAATATCAAAATTAACTTACAGGGCAAAAGAAGAAGTGTGTATATATCCAGACA AGAATATTAGGTTAAACCTTCACGGGAAAAGAAGAGTCTATACATATTAAGACA AAAATATAAGACATAGGAAGAATACCCATTTCAACTCCCCTCTGATTGCTACATT AGAATATTACATACAACAAGATAAATAATGGGCGCAACCACCTGACAGCAGGATT AGAACATCAGGCACAATCTCTCAACACGAGGCTACTCCATCTTAACATCAAGCTT AGAATATTCAATTTAGATTAAGGAACGGATTTAATAGTTCAAGGGTACAGGTACT AGAATATTAGGTATAGGCTGGGGTGCGGTTTTTCAAATCAAATGATCATCAATAA AGAATATTAGGTATAGACTGGGGTGCGGTTTTTCAAATCAATGATCATCATAAA AGAATATTAGGTATAGACTGGGGTGCGGTTTTTCAAATCAAATGATCATCAATAA AGAATATTAGGTATAGACTGGGGTGCGGTTTTTCAAATCAAATGATCATCAATAA AGAATATTAGGTATAGACTGGGGTGCGGTTTCTCAAATCAAATGATCATCAATAA AAAATATAAAGCATCGCCTAGATAGCGGTTTTTCAAATCAGATGATCATCAACAA ACAATATAAGAGAAAGGATTACAGAAGGGTTATCAAATCAGATGATAATTCATTG GTAATATCAAAGAGAGAATTTCAGAAGGGTTCTCAAACCAGATGATCATTAACTG GTAATATCAAAGAGAGAATTTCAGAAGGGTTCTCAAACCAGATGATCATTAACTG GTAATATCAAAGAGAGAATTTCAGAAGGGTTCTCAAACCAGATGATCATTAACTG ACAATATCAGACATCGTGTTAATGAAGGTTATTCTAACCAAGTAATCATCAACCA

GACTTGGAAATTACATTAGAGACAATATAAAGAATTTGAAGGAATTTCTACATGT Hendra ATCAT 415 AACAGGGTGATTACATTAGAAACAACATAAAAAACCTAAAGGAATTCATGCATAT Nipah TGCGT 415 Niniventer AGTATGGAAGAACAATCATTAGGGAATTACAATACCTGAGAAATCCCAAACATAT CCCTT 274 Berylmys ACTATGGTGAACAAGTTAAGAAGGCACTGATTCCATTTAAAAATGCCTTGCATAT ACCAT 274 Gierle GATTTGGGGAACAAGTCAACCGTTGTCTATTGGAGTATTCCAAGATCGTCCATGT ACCTT 274 Feline CTATGGGTGAAATTATCAACAAAATTAGAAATAAATATCCTAATTATTTACACAT ACCTT 281 AAATTGGGAATGTGGTAAATCTAAGACTCATGAGTTACCCCTACCACAGGCACAA Dolphin GATCT 259 GGGTGGGTGAAACAGTCAATTCTAAACTTAAAAGTTACCCCCATAATCGTCATAT Saiga_antelope, CATAT 259 GGGTGGGTGAAACAGTCAATTCTAAACTTAAAAGTTACCCCCATAATCGTCATAT Goitered_gazelle, CATAT 259 Domestic_sheep, GGGTGGGTGAAACAGTCAATTCTAAACTCAAAAGTTACCCCCATAATCGTCATAT CATAT 259 Wild_goat, GGTTGGGTGAAACAGTCAATTCTAAACTCAAAAGTTACCCCCATAATCGTCATAT CATAT 259 Bharal, GGGTGGGTGAAACAGTCAATTCTAAACTTAAAAGTTATCCCCATAATCGTCATAT CATAT 259 Domestic_goat, GGGTGGGTGAAACAGTCAATTCTAAACTTAAAAGTTACCCCCATAATCGTCATAT CATAT 2.59 AAGTTGGGAATGTCATCAAGTCCAAGCTTAGGAGTTATCCGGCCCACTCTCATAT Measles TCCAT 2.81 AGATAGGGAATGTTGTCCAATCCAAACTCAAAGGTTATCCGAACCATGAGCACAT Rinderpest 259 CCCAT Phocine_distemper_north_sea AAATTGGAAGTATTATCAACCAAACATTACTGTCCTACCCTCAATACAAACATGT GATAT 281 Phocine_distemper_caspian_sea, GATAT 2.59 Dog_canine_distemper GATAT 259 Ferret, GATAT 259 Porcine ACGTCGGACACATCATAAATGATCTACTGGCTACTTTGCCTAAAACAACTCATAT TCTGT 259 Phyllostomus TCCTT 259 ATCCCGAGTGCAATAAATCTTTATTCTCTCTCAAGTCTCCTGGAATGACAAGTAA 475

Hendra GTTGA Nipah ACTTG 475 Niniventer ATTAG 334 Berylmys ATTAT 334 Gierle ACTCA 334 Feline ATTAG 341 Dolphin **GCTGT** 319 Saiga_antelope, GCTCT 319 Goitered_gazelle, GCTCT 319 Domestic_sheep, GCTCT 319 Wild_goat, GCTCT 319

 Bharal,

GCTCT

GCTCT

Measles GATCC

Rinderpest

319

319

341

Domestic_goat,

AATTC 319 Phocine_distemper_north_sea GTTGA Phocine_distemper_caspian_sea, GCTGA 319 Dog_canine_distemper GCTGA 319 Ferret, GCTGA 319 Porcine ATTGC 319 Phyllostomus ATTGT 319 Hendra AGAGA 535 Nipah 535 TGGGA Niniventer CAATT 394 Berylmys 394 TAGGT Gierle TGATT 394 Feline 401 AAAAT Dolphin TGAAT 379 Saiga_antelope, GGATT 379 Goitered_gazelle, GGATT 379 Domestic_sheep, GGATT 379 Wild_goat, GGATT 379 Bharal, GGATT Domestic_goat, GGATT 379 Measles CCAAT 401 Rinderpest 379 TACAT Phocine_distemper_north_sea AAGAT 401 Phocine_distemper_caspian_sea, AAAAT 379 Dog_canine_distemper AAAAT 379 Ferret, AAAAT 379 Porcine TAGAT 379 Phyllostomus

CACTT 379

** * ** **

GTAATATCATGAAGAAATCATTTAAAGCATACAATATCGTGAGCAGAAAAATCAT ATAACATCATGAAAAAGTCATTCAAAGCATACAATATCATTAGTAAGAAAGTAAT AAGGGCTCTTCAAAAAAGGAAAAAATGCATATAACAAGATTAATACTCCCTTACT TACATATTCATAAGTATGCCAAACGTGGTTATAATAAGATTAGTCCTCAACTTAT CAAACATACATAAGGATGCTAAGCGCAGCTATGGCAAGATCTCTAGCTCTCTTGT AATCTCTTCTAAACAAAGGTGACACACTGTATCTCAAGATTCGATCAGATATCAT TAACCCTATTCAAAAAGGGAAATACAATATATACTAAGATCAGCGGAAAAATTAT CGGAGCTATTCAAGAAGGGTAATTCCTTGTACTCTAAGATAAGTCACCAGGTACT CGGAGCTATTCAAGAAGGGTAATTCCTTGTACTCTAAGATAAGTCACCAGGTACT CGGAGCTATTCAAGAAGGGTAATTCCTTGTACTCTAAGATAAGTCACCAGGTACTCGGAGCTATTCAAGAAGGGTAATTCCTTGTACTCTAAGATAAGTCACCAGGTACT CGGAGCTATTCAAGAAGGGTAATTCCTTGTACTCTAAGATAAGTCACCAGGTACT CGGAGCTATTCAAGAAGGGTAATTCCTTGTACTCTAAGATAAGTCACCAGGTACT GTGAGCTCCTAAAAAAGGGAAATTCGCTGTACTCCAAAGTCAGTGATAAGGTTTT GATCCCTGTTTAAAAAGGGGACCACCCTGTACACCAAAATCAGTGATAAAGTGTG GAACTATATTCAAGAGGGGCAATAGTATCTATAGCAAAATTACAGATGGGATCAA GAAATATTCAAAAGAGGAAATAGCATCTATAGCAAAATAACAGACGGGGTCAA GAAATATTCAAAAGAGGAAATAGCATCTATAGCAAAATAACAGACGGGGTCAA GAAATATTCAAAAGAGGAAATAGCATCTATAGCAAAATAACAGACGGGGTCAA TAGATTTGTTCAAGAAAGGAAACACGATATATACGAAAATATCCGGAGGGATAAT TGGAATTATTCAAGAAGGGGAATGTCATCTATCAGAAGATAGCCGGAGGTGTGGT

alignments.txt Wed Dec 18 07	7:53:28 2024 7		
Hendra	TGTTACAAAACATCACCAGGAATCTCATAACTCAGGACCAAAAGGATGAAGTTTT		
AGGTA 595 Nipah	TGCTGCAAAATATCACTAGAAATCTCATAACTCAAGATAGAAGAGATGAAATAAT		
TAATA 595 Niniventer	GTATCAAAATAATCCAGCAAGATTGTGGAATAACAAATAAATT		
GGATC 442 Berylmys	GCCTGCAGGAACTAGATCAATCTTTAGGGTCAACACAAACTAT		
TACTA 442 Gierle	GCCTTCGCTACCTCGATAAAAAGCTCGGTCAAAACAAGACAGT		
AGATC 442 Feline	GTTTTGATAGATTGAAAATGAAAATGAATATAAAGAATGATCT		
TCTTA 449 Dolphin	GTATGAAGGGAGTGAATTCAAGGCTAGGGATAAGCAGTGATTT		
AAGTA 427 Saiga_antelope,	GTCTTAAGAGAGTCAATGGGAAATTAGGTCTGGGCACAGATCT		
TACCC 427 Goitered_gazelle,	GTCTTAAGAGAGTCAATGGGAAATTAGGTCTGGGCACAGATCT		
TACCC 427 Domestic_sheep,	GTCTTAAGAGAGTCAATGGGAAATTAGGCCTGGGCACAGATCT		
TACCT 427 Wild_goat,	GTCTTAAGAGAGTCAATGGGAAATTAGGCCTGGGCACAGATCT		
TACCC 427	GTCTTAAGAGAGTCAATAGGAAATTAGGCCTGGGCACAGATCT		
Bharal, TACCC 427			
Domestic_goat, TACCC 427	GTCTTAAGAGAGTCAATGGGAAATTAGGCCTGGGCACAGATCT		
Measles GAGGG 449	GCCTGAGGGACACTAACTCACGGCTTGGCCTAGGCTCCGAATT		
Rinderpest AGGAA 427	GCTTAGAGACTGCTAACTCAAGACTAGGATTGGGTGCCGACTT		
Phocine_distemper_north_sea GGATA 449	GTCTAGTTAATATTAACTTAAATATTGGTCTGGGTGAGACATT		
Phocine_distemper_caspian_sea, GGACA 427	GCTTAAACGATATTAATCTTAATATTGGTTTAGGGGGTGCACT		
Dog_canine_distemper GGACA 427	GCTTAAACGATATTAATCTTAATATTGGTTTAGGGGGTGCACT		
Ferret, GGACA 427	GCTTAAACGATATTAATCTTAATATTGGTTTAGGGGGTGCACT		
Porcine CCCTG 427	GCTTAACCAACCTTAATCAATCACTGGGTCTTGGAGGCAATCT		
Phyllostomus TCCTG 427	GCCTGACAAAACTCAACCAGTCGTTAGGTCTTGGGAATGATAT		
10019 427	*		
Hendra	TTTATGAGCAGGACAGACTCAGTAACATAGGGAAATACATGAGTCAATCGCAATG		
GTATG 655 Nipah	TACATGAGTGTAGGCGATTAGGGGATTTAGGGAAGAATATGAGTCAATCTAAATG		
GTATG 655 Niniventer	TCGAAACCACCCACAGGTTACTTAACTTGCCTTCAATAGCTGAGCAATCTCGATG		
GTTTT 502 Berylmys	CACAAGTTATAGATAAGATGCGTGATCTTCCTTTAATCTATGAATCTTCTCAGTG		
GTTTG 502 Gierle	AATTCCTCATAGATAAGGTAACTAATATACCTCAGATTTACGAGTCTTCGCCATG		
GTTCG 502 Feline	ATGACAATAGTCAATTGATTCTAGATCTTCCTTTAATTATCAAAGGATCTCAGTG		
GTTCT 509 Dolphin	AAGAAGTTACGACAGGGATCACAGATTTGGGAGCCTACATGCAGAGTTCTCAATG		
GTATG 487 Saiga_antelope,	ATGGTCTGAAGGAGGGTATCCTTGACCTAGGGTTGCACATGCATAGCTCTCAATG		
GTTCG 487 Goitered_gazelle,	ATGGTCTGAAGGAGGGTATCCTTGACCTAGGGTTGCACATGCATAGCTCTCAATG		
GTTCG 487 Domestic_sheep,	ATGGTCTGAAGGAGGGTATCCTTGACCTAGGGTTGCACATGCATAGCTCTCAATG		
GTTCG 487 Wild_goat,	ATGGTCTGAAGGAGGGTATCCTTGACCTAGGGTTACACATGCATAGCTCTCAATG		
GTTCG 487 Bharal,	ATGGTCTGAAGGAAGGTATCCTTGACCTAGGGTTGCACATGCATAGCTCTCAATG		

Phocine_distemper_north_sea GTTTG

Phocine_distemper_caspian_sea,

GTTCG

Dog_canine_distemper

GTTCG 487 Ferret, GTTCG 487 Porcine GTTCG 487 Phvllostomus GTTTG 487

Hendra CTCAC

715

Niniventer ATCTG 562

GTCAG 562 Gierle

AACAA

569 AAATC Dolphin

Saiga_antelope,

ACAGT 547

ACAGT 547

ACAGT 547 Wild_goat,

ACAGT 547 Bharal,

ACAGT 547

ACAAA Rinderpest ATCAG 547

TTCTA 569

CTCTA 547

CTCTA 547 Ferret, CTCTA 547 Porcine AAGTA

CAATA 547

ATGGTCTGAAGGAGGGTATTCTTGACCTAGGGTTGCACATGCATAGCTCTCAATG

AGGACATCAAGGAGAAAATTATTAACTTGGGAGTTTACATGCACAGCTCCCAATG

TTGGGATCAAGGAGAAGATCTTGAGTCTAAGCTTGTACATGCAGAGTTCCCAGTG

AAACAGTGAGAACAAACATAGATGAAGTCGGCATTGTTATGCAGAGCTCACAGTG

AGACTATTGGGACCAAAATTGATGAAGCAGGCATAATTATGCAAAGCTCACAGTG

AGACTATTGGGACCAAAATTGATGAAGCAGGCATAATTATGCAAAGCTCACAGTG

AGACTATTGGGACCAAAATTGATGAAGCAGGCATAATTATGCAAAGCTCACAGTG

AAATCTACCATAACCCAATACAAGATTTAGGAGTTATGATGCAAAGTTCAAAGTG

TTCCCCTTCAGAAATTGATACAGGATTTGGGGGATAGTGATGCACAGTTCAAGGTG

**

Nipah

715 TTCGC Berylmys

562 Feline

AGCTA 547

Goitered_gazelle,

Domestic_sheep,

ACAGT 547 Domestic_goat,

Measles 569

Phocine_distemper_north_sea

Phocine_distemper_caspian_sea,

Dog_canine_distemper

547 Phyllostomus AGTGTTTTCTCTTCTGGTTCACAATCAAGACAGAGATGAGAGCTGTTATCAAGAA

AGTGTTTTTGTTTTGGTTTACTATCAAAACAGAGATGCGAGCAGTGATCAAGAA

ACCCCTTCTTATTTTGGTTCACAATTAAAACAGAATACAGAAAAGTCATAAAACA

AGCCATTCCTATTTTGGTTTACTGTTAAAACAGAGCTCCGGAAACTTATTAAGCA

AGCCATTTTTGCTGTGGTTTACCATCAAGACTGAGCTTAGAAAGCTAATCAAGGC

TCCCTTTTTTATTCTGGTTTTCTATCAAAACTGAAACTAGAAGCTGTATTCGCCA

GGCCTTTCTATATTGGTTCACAATTAAAACTGAGATGCGGTCCATCATCAAATC

AGACTTTCCTGTTCTGGTTCACTATCAAGACAGAGATGAGATCAATGATCAAAGA

AGACTTTCCTGTTCTGGTTCACTATCAAGACAGAGATGAGATCAATGATCAAAGA

AGACTTTCCTGTTCTGGTTCACTATCAAGACAGAGATGAGATCAATGATCAAAGA

AGACTTTCCTGTTCTGGTTCACTATCAAGACAGAGATGAGGTCAATGATCAAAGA

AGACTTTCCTGTTCTGGTTCACTATCAAGACAGAGATGAGATCAATGATCAAAGA

AGACTTTCCTGTTCTGGTTCACTATCAAGACAGAGATGAGATCAATGATCAAAGA

AGCCCTTTCTGTTTTGGTTTACAGTCAAGACTGAGATGAGGTCAGTGATTAAATC

AGCCATTCTTGTTCTGGTTCACGATCAAGACAGAAATGAGATCAACAATCAAGTC

AACCCTTCCTCTTATGGTTCACGATCAAAACAGAAATGAGATCAGTGATAAAATC

AACCTTTCCTTCTATGGTTTACAATTAAAACAGAAATGAGATCAGTGATTAAATC

AACCTTTCCTTCTATGGTTTACAATTAAAACAGAAATGAGATCAGTGATTAAATC

AACCTTTCCTTCTATGGTTTACAATTAAAACAGAAATGAGATCAGTGATTAAATC

GTTCATTCCTGTTTTGGTTCACCATCAAAACCGAGATGAGGTCTGTAATAAAATC

AGCCTTTCTTATTTTGGTTTACAATCAAAACCGAAATGAGATCAGTAATAAAATC

Hendra GTGTT 835 Nipah GTGTT 835 Niniventer AGTTT Berylmys 676 GATTT Gierle TGTCT 676 Feline TATAT 683 Dolphin TATCT 661 Saiga_antelope, TGTCT 661 Goitered_gazelle, TGTCT 661 Domestic_sheep, TGTCT 661 Wild_goat, TGTCT 661 Bharal,

661

CAAAA

TGTCT

607

TTGTAATGAACCCAAATCTTGTCTGCATTTACAAAAATGATAAGGATGGAAAGAG
TAATCCTAAATCCGAATCTTATCTGCATTTTCAAATCAGACAAAACTGGAAAGAA
TTATATTT-----AATCACTATTTTATTACAATAGTAGATAAAGTTAGACATGA
TCCTATTC-----CACCCTAATTTGGTAACAATTATCAATAAAGAATCTCAATC
TGCTTATG-----CACCCTGGACTGATTGCACTGATTGACAGAGATAATAGTCT
TGGTTGTT-----ACATCTGATCTGATTACAATATTTGATCATATAAAAAG
TTTTGATA----TCTAGAGACTTGGTAACCATAATTAATAAAAGGTCACAAGA
TGCTCGTA-----TCGCGAGACCTCGTTGTGATAATTGATAAGAATACCCAGTA
TGCTCGTA-----TCACGAGACCTCGTTGTGATAATTGATAAGAATACCCAGTA
TGCTTGTA-----TCACGAGACCTCGTTGTGATAATTGATAAGAATACCCAGTA
TGCTCGTA-----TCACGAGACCTCGTTGTGATAATTGATAAGAATACCCAGTA

TGCTCGTA----TCACGAGACCTCGTTGTGATAATTGATAAGAATACCCAGTA

TGTCT 661 Measles TGTAT 683 Rinderpest TGTGT 661

Phocine_distemper_north_sea

TGTTT

Phocine_distemper_caspian_sea,

Dog_canine_distemper

TGTTT 661 Ferret, TGTTT 661 Porcine GGTTT 661

Phvllostomus GGTCT 661

Hendra GATGA 895

Nipah GATGA

895 Niniventer

TCAAT 736

Berylmys

CCAAA 736

Gierle

CCAAA 736

Feline

743 AATGA

Dolphin AATGA

721 Saiga_antelope,

TATGA 721

Goitered_gazelle, TATGA 721

Domestic_sheep, TATGA 721 Wild_goat, TATGA 721

Bharal,

TATGA 721 Domestic goat, TATGA 721

Measles 743 AATGA Rinderpest

GATGA

Phocine_distemper_north_sea

743 AATGA

Phocine_distemper_caspian_sea,

721 AATGA

Dog_canine_distemper

721

AATGA 721 Ferret, 721 AATGA Porcine

AATGA 721 Phyllostomus

721 AATGA

TGCTCGTA----TCACGAGACCTCGTTGTGATAATTGATAAGAATACCCAGTA

10

TGTTAATC----TCTCGTGACCTTGTTGCTATAATCAGTAAGGAGTCTCAACA

TTCTGATT----TCCCGCGATCTAGTGGCGATAGTACACAGGAGACTCCATCA

TACTAGTA----TCCCGGGATCTAGTCTGCCTCATTGATCTTGCAAATTATAG

TGTTAGTG-----TCTAGGGACCTTGTATGTATTATTGATCTCACCAGTCACAA

TGTTAGTC----TCTAGGGACCTTGTATGTATTATTGACCTCACCAGTCACAT

TGTTAGTC----TCTAGGGACCTTGTATGTATTATTGACCTCACCAGTCACAT

TCCTTGTT----TCGAGAGACCTCGTTTGCCTTGTGAACCTTGCTGACAAGAG

TTTTGGTC----TCAAGGGACATGGTTTGTCTGGTAACATTGGAGGGAGGTAG

ACTACCTTACACCAGAAATTGTTCTAATGTGTTGTGATGTCTTGGAAGGCCGGAT

ATTATCTTACACCCGAAATGGTTCTAATGTATTGTGATGTCCTAGAGGGAAGGAT

ATTACTTGACCTTCGAAATGGTTCTAATGTTCTGTGATGTTATTGAGGGTAGGCT

ATTATTTGACTGTTGAACATGTTCTAATGTACTGTGATGTAATTGAAGGTAGGCT

ACTACCTCACTGTCGAACATGTCCTTATGTATTGTGATGTCATTGAGGGGCGGCT

TTTATCTGACTTTTGAGATGCTGTTAATGTATTGCGATGTGATAGAAGGTCGGTT

TCTACTTAACATTTGAGCTGGTCCTTATGTACTGTGATGTCATAGAGGGTAGACT

TCTACTTAACATTTGAGCTGGTCCTTATGTACTGTGATGTCATAGAGGGTAGACT

TCTACTTAACATTTGAGCTGGTCCTTATGTATTGTGATGTCATAGAGGGCAGACT

TCTACTTAACATTTGAGCTGGTCCTTATGTATTGTGATGTCATAGAGGGCAGACT

TCTACTTAACATTTGAGCTGGTCCTTATGTATTGTGATGTCATAGAGGGCAGACT

TCTACTTAACATTTGAGCTGGTCCTTATGTATTGTGATGTCATAGAGGGCAGACT

ATTACCTGACGTTTGAACTGGTTTTGATGTATTGTGATGTCATAGAGGGGAGGTT

ATTACCTGACATTCGAGTTGGTGTTGATGTACTGTGATATCATAGAGGGTAGGTT

ATTATTTGACTTTTGAAATGGTCTTGATGTACTGTGATGTGATTGAGGGAAGATT

ATTACCTAACATTTGAATGGTCTTGATGTACTGTGATGTAATAGAAGGGAGGCT

ATTACCTAACATTTGAAATGGTCCTGATGTACTGTGATGTAATAGAAGGGAGGCT ATTACCTAACATTTGAAATGGTCCTGATGTACTGTGATGTAATAGAAGGGAGGCT

ACTACTTAACATTTGAAATGGTCCTGATGTACTGTGATGTCATCGAAGGCCGATT

TCGAGACTTCGATAAAATCTGATATCAAATACCAATCTTTAATTACCAGATCCAA

Nipah TGCCC 955 Niniventer TTTAT 796 Berylmys TTTAC 796 Gierle ACTAT 796 Feline 803 ATATA Dolphin GTACC 781 Saiga_antelope, ATACT 781 Goitered_gazelle, ATACT 781 Domestic_sheep, ATACT 781 Wild_goat, ATACT 781 Bharal, ATACT 781 Domestic_qoat, ATACT 781 Measles 803 ATACA Rinderpest 781 GTATA Phocine_distemper_north_sea GTATC 803 Phocine_distemper_caspian_sea, GTATC 781 Dog_canine_distemper GTATC 781 Ferret, GTATC 781 Porcine CTATC 781 Phyllostomus CTATC 781

TGGAGACAACAGTCAAATCGGATATCAAGTACCAACCTCTAATCTCGAGATCCAA CAGATACTGCTATGCAACTTGACCCGAAATACCATAAACTTAAACCAAGAGTGCA CTGAGTCATTAATGAGACTTGATTGTAAGTACAGCATTCTTCACAGTAGAGTCAG CCGATACAGCAATGAGACTTGATCTTAAATACGCCTCATTTCATGAGCGTGTCAA CTGAAACAGCTATGAGCTTGGACTGTCGGTTTACCAATCTATTGCCAAGAGTGCA CGGAAACTGCAATGACTGTGGACCCTAGGTACACTGAGCTCCTCTGTAGAGTAAA CGGAGACAGCCATGGCCATAGACCAGAGATATTCAGAACTTCTAAGCCGGGTCAG CGGAGACAGCCATGGCCATAGACCAGAGATATTCAGAACTTCTAAGCCGGGTCAG $\tt CTGAGACAGCCATGGCCATAGATCAGAGATATTCAGAACTTCTAAGCCGAGTCAG$ CGGAGACAGCCATGGCCATAGACCAGAGATATTCAGAACTTCTAAGCCGAGTCAG CGGAGACAGCCATGGCCATAGACCAGAGATATTCAGAACTTCTAAGCCGGGTTAG CGGAGACGGCCATGGCCATAGACCAGAGATATTCAGAACTTCTAAGCCGGGTCAG CAGAGACCGCTATGACCATTGATGCTAGGTATGCAGAACTTCTAGGAAGAGTCAG CTGAGACTGCTATGGTCATAGATCCCAGGTACACAGAGCTGCTGGAGAGAGTCCG $\tt CTGATACAGCTATGGCAATTGACCCGCGTTACTCAGCTTTGCATGTCAGAATTAA$ CTGATACTGCTATGGCAATTGATCAACGTTACTCAACTTTGCATGTCAGGATCAG CTGATACTGCTATGGCAATTGATCAACGTTACTCAACTTTGCATGTCAGGATCAG CTGATACTGCTATGGCAATTGATCAACGTTACTCAACTTTGCATGTCAGGATCAG CTGACACAGCCATGTGTATTGATTCAAAATTTGCTCAGCTACGTAAAAGGGTCCA CAGACACTGCAATGAGTTTGGATCTCAAGTTTGCCAACTTGTACAAGAGGGTTCA

Hendra AGTAT 1015 Nipah AGTGT 1015 Niniventer AGTGG 856 Berylmys AGTTG 856 Gierle AGTTG 856 Feline 863 TATTG Dolphin CGTGG 841 Saiga_antelope, TGTTG 841 Goitered_gazelle, 841 TGTTG Domestic_sheep, TGTTG 841 Wild_goat, TGTTG 841 Bharal, TGTTG 841 Domestic_goat,

TGTGGACATTCATTGATTCACTCTTCCCGATTATGGGTAATAGGATATACAATAT
TCTGGGGGCTAATTGATCCCTTGTTCCCTGTCATGGGAAACAGAATTTACAATAT
TATGGGAGTTGATTGACGGCCTCTTTCTTGATTTAGGTAACAAGACCTATAATAT
TGTGGGAGTTAATTGACGGATTATTTGAAGACCTTGGCAATACAACATATGATAT
TGTGGGATCTCATAGATAGGTTATTTGAGGACCTTGGGAATAAAAACCTATGACGT
TGTGGGATTTACTAGATGGAATGTTTGAAAGTTTAGGCAATCAAATTATATTCAGT
TATGGAATTTGATAGACGGCTTCTTCCCCACCCTTAGGCAACACCACATACCAAAT
TGTGGGATCTTATTGATGGGTTCTTCCCAACACTAGGCAACACCACATACCAAAT
TGTGGGATCTTATTGATGGGTTCTTCCCAACACTAGGCAACACCACATACCAAGT
TGTGGGATCTTATTGATGGGTTCTTCCCAACACTAGGCAACACCACATACCAAGT
TGTGGGATCTTATTGATGGGTTCTTCCCAACACTAGGCAACACCACATACCAAAT
TGTGGGATCTTATTGATGGGTTCTTCCCAACACTAGGCAACACCACATACCAAAT

841

TGTTG

Hendra TGGGT

Nipah

1135

```
TGTGGAAACTGATAGATGGTTTCTTCCCTGCACTCGGGAATCCAACTTATCAAAT
Measles
TGTAG
       863
                                   TGTGGAAACTCATTGATGGGTTTTTCCCAACTCTTGGAAATTCTACTTACCAAGT
Rinderpest
TGTGG
       841
Phocine_distemper_north_sea
                                   TCTGGGACTTGATTGACGGTTTCTTTCCGGACTTAGGTAATTCAACTTATCAACT
GGTTG
       863
Phocine_distemper_caspian_sea,
                                   TCTGGGATCTAATTGACGGATTTTTCCCGGATCTGGGAAATTCAACCTATCAATT
GGTGG
                                   TCTGGGATCTAATTGACGGATTCTTCCCGGATCTGGGAAATTCAACCTATCAATT
Dog canine distemper
GGTGG
       841
Ferret,
                                   TCTGGGATCTAATTGACGGATTTTTCCCGGATCTGGGAAATTCAACCTATCAATT
GGTGG
       841
Porcine
                                   CGTAG
       841
Phyllostomus
                                   TCTGGGACTTGATGATGGATTCTTCCCTGATCTCGGGAATGCAAACTACCAGCT
TGTAG
      841
Hendra
                                   CTATGATAGAGCCTTTAGTCTTGGCACTTTTACAGTTGAAAGATGAGGCGCGCAT
CCTAA
       1075
                                   CTATGATAGAGCCTTTAGTTCTTGCACTACTCCAACTCAAGGATGAGGCTAGGAT
Nipah
CCTGA
       1075
                                   CATTATTAGAACCCCTGGCTTTAGCCCACCTCCAGCTTCTCGATAGTTGTACTTC
Niniventer
TATCA
       916
                                   CACTACTAGAACCTCTAGCCCTTGCACACCTACAACTGTTAGATGAGTGTACTTC
Berylmys
TATCA
       916
                                   CTCTTCTCGAACCTCTGGCTCTTGCACATCTCCAGCTTAGGGATGCTTGTGTTTTC
Gierle
TATTC
       916
Feline
                                   CATTATTAGAGCCTCTTTCTCTTGCTTATTTGCAATTGATAGATGCAGATCCACA
GATTC
       923
Dolphin
                                   CATTATTAGAGCCATTGTCTCTGGCCTATCTCCAGTTGAAAGATATCACACTTGA
       901
ATTGA
Saiga_antelope,
                                   CTCTGCTTGAACCATTATCGTTGGCTTATCTTCAACCTCAGGATGTCACTCTGGA
GTTAA
       901
Goitered_gazelle,
                                   CTCTGCTTGAACCATTATCGTTGGCTTATCTTCAACCTCAGGATGTCACTCTGGA
GTTAA
       901
Domestic_sheep,
                                   CCCTGCTTGAACCATTATCGTTGGCTTATCTTCAACCTCAGGATGTCACTCTGGA
GTTAA
       901
Wild_goat,
                                   CTCTGCTTGAACCATTATCGTTGGCTTACCTTCAACTACAGGATGTCACTCTGGA
GTTAA
       901
Bharal,
                                   CTCTGCTTGAACCATTATCGTTGGCTTATCTTCAACCTCAGGATGTCACGCTGGA
GTTAA
       901
Domestic_goat,
                                   CTCTGCTTGAACCATTATCGTTGGCTTATCTTCAACCTCAGGATGTCACTCTGGA
GTTAA
       901
Measles
                                   CCATGCTGGAGCCACTTTCACTTGCTTACCTGCAACTGAGGGATATAACAGTAGA
ACTCA
       923
Rinderpest
                                   CTCTGTTAGAGCCGCTTTCACTTGCCTACCTCCAACTGAGAGATGTAACAACAGA
ATTAA
       901
                                   CTCTATTAGAACCTCTTTCTTTGGCTTATTTACAACTAAAAGACATAACGTTTTT
Phocine_distemper_north_sea
        923
CCTCA
                                   CTCTACTGGAGCCTCTCTCATTGGCTTACTTGCAGTTAAAAGACATCACCTTCTC
Phocine_distemper_caspian_sea,
TCTCA
        901
Dog_canine_distemper
                                   CTCTACTGGAGCCTCTCTCATTGGCTTACTTGCAATTAAAAGACATCACCTTCTC
TCTCA
       901
Ferret,
                                   CTCTACTGGAGCCTCTCTCATTGGCTTACTTGCAATTAAAAGACATCACCTTCTC
TCTCA
        901
Porcine
                                   CGTTGCTTGAACCACTTTCCCTCGCTTACCTCCAGCTGAAAGATGCAACAGATCA
GCTCA
       901
Phyllostomus
                                   CATTACTTGAGCCTCTCTCACTCGCCTACTTGCAGCTTAGGGATGTAACAGATCA
ATTGA
       901
                                                                 * **
                                                                            **
```

GAGGGCATTTCTACATCATTGCATTAAAGAGATCCACCAAGAGTTGATTGGATG

TGGTT 1135 Niniventer GGGAT 976 Berylmys TGGAT 976 Gierle TGGGT 976 Feline 983 AACCC Dolphin 961 **TGGAG** Saiga_antelope, CGGCA 961 Goitered_gazelle, CGGCA 961 Domestic_sheep, CGGCA 961 Wild_goat, CGGCA 961 Bharal, CGGCA 961 Domestic goat, CGGCA 961 Measles 983 CGGGT Rinderpest CGGAG 961 Phocine_distemper_north_sea TGGGT 983 Phocine_distemper_caspian_sea, TGGCT 961 Dog_canine_distemper TGGCT 961 Ferret, TGGCT 961 Porcine AGGTT 961 Phyllostomus AGGAT 961

Hendra TATTG 1195 Nipah TATCG 1195 Niniventer TCCTG 1036 Berylmys GCCGT 1036 Gierle 1036 ACCTT Feline GACAG 1043 Dolphin TACTG 1021 Saiga_antelope, CACCC 1021 Goitered_gazelle, CACCC 1021 Domestic_sheep, CACCC 1021 Wild_goat, CACCC 1021 Bharal, CACCC 1021 Domestic_goat, CACCC 1021

GAGGTGCTTTTCTCAACCACTGTTTTGAGGAACTTGACGAAGTCCTCTCTCCGA GGGGTTGTTTCTTGAAACAATGTCTATCAGACTTAGATCAACTATTATTAAAGAA GGGGAGCTTTCTTGCGGCAGTGCTTAGGAGAGCTGAAATCACTTCTACTAGAAAA GGGGAACATTCTTGCATCACTGCTTTTCCGAGTTAGAAGAAATTATATTTGACAA GGGGCGCATTCCTTAGTCACTGTTTTAATGAAATCCATGACATTTTGGAGAGTAG GAGGTGCTTTTTTAGACCATTGCTTCAAAGAACTCTATGAGATACTGGAACATTG GAGGTGCTTTTTTAGACCATTGCTTCAAAGAACTCTATGAGATACTGGAACATTG GAGGTGCTTTTTTAGACCATTGCTTCAAAGAACTCTATGAGATATTGGAGCATTG GAGGTGCTTTTTTAGACCATTGCTTCAAAGAACTCTATGAGATACTGGAGCATTG GAGGTGCTTTTTTAGACCATTGCTTCAAAGAACTCTATGAGATACTGGAGCATTG GAGGTGCTTTTTTAGACCATTGCTTCAAAGAACTCTATGAGATACTGGAGCATTG GAGGTGCTTTCCTTAACCACTGCTTTACTGAAATACATGATGTTCTTGACCAAAA GAGGTGCATTCCTAAATCATTGCTTCACTGAGATCCGTGAAATTCTTAATCAGAA AAGGTGCTTTCTTAAGTCATTGCTTTACAGAGATACAAGGAATATTGCAGGCCAG GGGGTGCTTTCTGAGTCACTGCTTTGCTGAAATTCAGGAGATTTTACAGGACAA GGGGTGCTTTCTGAGTCACTGCTTTGCTGAAATTCAGGAGATTTTACAGGACAA GGGGTGCTTTCTGAGTCACTGCTTTGCTGAAATTCAGGAGATTTTACAGGACAA AAGGCGCCTTTCTGTCTCATTGCTTTACAGAGATTTAAAGAGATTTTAGATAACCA AAGGTGCATTCCTTTCGCATTGTTTTGCTGAGATCAAGAAATCCTAGATCAACA ** **

TTACTGATCAAAAACAAGATCTATCTTTATCGATGATCTTCTATCAGTAATGAA

TTACAGATCAGAAGATCGGTCTATGTTTATTGATGATCTTTTATCCATTCTAAA

ATGATGATCCTGATGACATCAAGGTACTACATGATCAAATCTATGAAATATTTAA

ATAGAAATGAATCAGATATAACAAATTTACACCTGATGATCTATAACATATTTGA

ATACAAATGAGGGGGGACATTTCACTGCTGTTTAAAATCATCTATAAAATCTTCGA

CTTTTGATCCTTTTGTGTATGAAAATTTAATTAATGGGCTTGATTACATTTATT

TTTAACTGAGGGAGACATATCCGATGTTGTCAATGCATTGGATTACATCTTCAT

TTGACACAGCAGGCACTTACAATTCCATCACTGAAGGATTGGATTACGTATTCAT

TTGACACAGAAGGCACCTACAATTCCATCACTGAAGGATTGGATTACGTATTCAT

TTGGCACAGAAGGCACCTACAATTCCATCACTGAAGGATTGGATTACGTATTCAT

TCGACACAGAAGGCACCTACAATTCCATCACTGAAGGATTGGATTACGTATTCAT

CCTTG

Nipah

TCTTG

1315

1315

Measles TTTCTGATGAAGGTACTTATCATGAGTTAATTGAAGCCCTAGATTACATTTTCAT AACTG 1043 TCACAGATGACAACACATACCACGAGATCGTCGAGGCCCTAGATTATATTTTCAT Rinderpest AACTG 1021 Phocine_distemper_north_sea TCTACACCGATGAGACATTCCAAACACTGACTCAGGCTTTAGATTTCATTTCAT AACAG 1043 Phocine_distemper_caspian_sea, TCTATACTGAAGAGGCGTTCCAAACTTTAACCCAAGCTCTAGACTTCGTTTTCAT CACAG 1021 Dog_canine_distemper TCTATACTGAAGAGGCGTTCCAAACTTTAACCCAAGCTCTAGACTTCGTTTTCAT CACAG 1021 Ferret, TCTATACTGAAGAGGCTTCCAAACTTTAACCCAAGCTCTAGACTTCGTTTTCAT CACAG 1021 Porcine TTACTTTGCCAGACACATATGCTCAATTAATCGAGGCTTTAGATACTATCTTTAT CACTG 1021 Phyllostomus TTACCTCGCAGGAGACGTACACCAGCCTAATTGATGCACTTGACACTATCTTCAT CACTG 1021 Hendra ATAATATCCATCTGTTAGCTGAGTTCTTTTCTTTCTTCCGAACCTTTGGTCATCC AATTC 1255 Nipah ATAATATACATCTGTTGGCAGAGTTCTTTTCTTTCTTTCGTACGTTTGGCCATCC TATTC 1255 Niniventer ATGATATCCATCTAACTGCAGAGCTGTTTTCTTTCTTCCGAGGGTTTGGTCATCC AACGC 1096 CAGATATTCACCTGACTGCAGAAATCTTCTCTTTTTTTAGAAGCTTCGGACATCC Berylmys AACTT 1096 CAAATCTACATCATACAGCTGAACTTTTCTCCTTTTTCCGAAGTTTCGGCCACCC Gierle 1096 TACCC Feline TTTTT 1103 Dolphin ACGACATCCACCTGACAGGGGAGATATTTTCATTCTTCCGAAGTTTCGGTCACCC GCGTC 1081 Saiga_antelope, ACGATATACATCTAACTGGGGAGATTTTTTCATTTTTCCGGAGTTTCGGACACCC CCGTC 1081 Goitered_gazelle, ACGATATACATCTAACTGGGGAGATTTTTTCATTTTTCCGGAGTTTCGGACACCC CCGTC 1081 Domestic_sheep, ACGATATACATCTAACTGGGGAGATTTTTTCATTCTTTCGGAGTTTTCGGACACCC CCGTC 1081 Wild_goat, ACGATATACATCTAACTGGGGAGATTTTTTCATTCTTTCGGAGTTTCGGACACCC CCGTC 1081 Bharal, ACGATATACATCTAACTGGGGAGATTTTTTCATTTTTCCGGAGTTTCGGACACCC CCGTC 1081 Domestic_goat, ACGATATACATCTAACTGGGGAGATTTTTTCATTTTTTCGGAGTTTCGGACACCC CCGTC 1081 Measles ATGACATACATCTGACAGGGGAGATTTTCTCATTTTTCAGAAGTTTCGGCCACCC CAGAC 1103 Rinderpest ATGACATTCACCTCACGGGTGAAATCTTTTCATTCTTTAGAAGTTTCGGCCACCC CAGGC 1081 Phocine_distemper_north_sea AGGATATACACATAACAGGAGAGATTTTCTCCTTTTTTAGAAGTTTTTGGCCATCC TAGAC 1103 Phocine_distemper_caspian_sea, AGGATATACATATAACAGGAGAAATCTTTTCCTTCTTTAGAAGTTTCGGTCACCC 1081 AAGGT Dog_canine_distemper AGGATATACATATAACAGGAGAAATCTTTTCCTTCTTTAGAAGTTTCGGTCACCC AAGGT 1081 Ferret, AGGATATACATATAACAGGAGAAATCTTTTCCTTCTTTAGAAGTTTCGGTCACCC AAGGT 1081 Porcine TCGGT 1081 ACGATGTCCACTTGACTGGAGAGATATTTTCATTCTTTAGGAGTTTTTGGCCATCC Phyllostomus ACGTC 1081 * ** ** ** ** ** ** ** ** ** Hendra TCGAAGCCAAAACCGCAGCAGACAAAGTTAGAGAGCATATGCTAGCAGATAAGGT

TTGAGGCTAAAGTTGCTGCAGAAAAAGTGAGAGAACATATGTTGGCAGATAAAGT

Niniventer CCTTA 1156 Berylmys GATTG 1156 Gierle CATCG 1156 Feline AATAT 1163 Dolphin TATCA 1141 Saiga_antelope, AATCA 1141 Goitered_gazelle, AATCA 1141 Domestic_sheep, AATCA 1141 Wild_goat, AATCA 1141 Bharal, AATCA 1141 Domestic_qoat, GATCA 1141 Measles CATTG 1163 Rinderpest AATAG 1141 Phocine_distemper_north_sea 1163 AGTTT Phocine_distemper_caspian_sea, TGTCT 1141 Dog_canine_distemper TGTCT 1141 Ferret, 1141 TGTCT Porcine CATCT 1141 Phyllostomus AGTTT 1141 Hendra

GTACC 1375 Nipah GTATA 1375 Niniventer CTATA 1216 Berylmys ACACA 1216 Gierle ATATC 1216 Feline ATTTA 1223 Dolphin GTACC 1201 Saiga_antelope, TTTCC 1201 Goitered_gazelle, TTTCC 1201 Domestic_sheep, 1201 TTTTA Wild_goat, TTTTA 1201

Bharal,

1201

1201

Domestic_goat,

TTTTA

TTTTA

Measles

TTGAGGCTGTGACGGCTGCTGATAAGGTGAGAGTACATATGCATTCTCCTAAAGT TGGAAGCAATTACAGCAGCAGAAAAGGTCAGAGCTCATATGTCAAAGCCTAAAGT TTGAAGCTGTCAATGCTGCAACTAAGGTTAGAGACCATATGTCTAAAGCAAAAGT TAGAGGCACAAAATGCTGCTAATAATGTAAGGAAGTATATGAATAAGCCTAAGGT TTGAAGCAGTAACGCTGCTGAAAATGTCAGGAAATACATGAATCAGCCTAAAGT TTGAGGCAATCACAGCCGCAGACAATGTAAGGAAACATATGAACCAGCCGAAGGT TAGAAGCAGTAACTGCAGCAGAAAATGTCCGGAAGCACATGAACCAGCCCAAAGT TAGAAGCAATAACAGCAGCAGAAAACGTACGGAAACACATGAATCAACCCAAAGT TAGAAGCAATAACAGCAGCAGAAACGTACGGAAACACATGAATCAACCCAAAGT TAGAAGCAATAACAGCAGCAGAAACGTACGGAAACACATGAATCAACCCAAAGT TAGAGGCAGTGACTGCAGCAGAGAATGTGAGGAAGCACATGAATCAGCCAAAAGT TAGAAGCCATCACTGCTGCTGAAAATGTACGAAAGCACATGAATCAACCAAAGGT * ** ** ** ** ** **

AATACGGGCCAATCATGAAAGCACACGCAGTCTTTTGTGGTACAATTATAAATGG
AATATGCCCCTATAATGAAAGCACATGCTATATTCTGCGGGACTATAATAAATGG
GTTATGAAGTTCTGATGAAGTCTCATGCCATATTTTGTGGGATTATCATCAATGG
ATTACCAGATTCTTATGAAGGGTCATGCAATTTTCTGTGGGATTATAATAAATGG
ATTATCAAACATTGATGAAGGGCCATGCAGTCTTCTGTGGAATCATCATTAATGG
CATATCAGACTTTAATGCAAGGACATGCGATTTTTTGCGGTATTATAATAAATGG
ACTACGAGACTATGATGAAGGGCCATGCGGTATTTTTGCGGGATAATCATAAATGG
GTTATGAGACTATGATGAAGGGCCATGCGGTATTTTTGCGGGATAATCATAAATGG
GTTATGAGACTATGATGAAAGGGCCATGCGGTATTTTTGCGGGATAATCATAAATGG
GTTATGAGACTATGATGAAAGGGCCATGCGGTATTTTTGCGGGATAATCATAAATGG
GTTATGAGACTATGATGAAAGGGCATGCAGTATTTTGCGGGATAATCATAAATGG
GTTATGAGACTATGATGAAAGGGCATGCAGTATTTTGCGGGATAATCATAAATGG
GTTATGAGACTATGATGAAAAGGACATGCCGTATTTTTGCGGGATAATCATAAATGG

Nipah

TTGGG

Niniventer

1495

CTATC 1223 TTTATGAAACCCTGATGAAAGGACATGCCATATTTTGCGGGATTATCATCAACGG Rinderpest GTATC 1201 Phocine_distemper_north_sea CTTATGAGACAATGATGAAAGGGCATGCCATCTTCTGTGGGATTATAATCAATGG 1223 TTATA Phocine_distemper_caspian_sea, CTTATGAGACTATGATGAAGGGACATGCTATATTCTGTGGGATAATCATTAACGG TTATC 1201 Dog_canine_distemper CCTATGAGACTATGATGAAGGGACACGCTATATTCTGTGGGATAATCATTAACGG TTATC 1201 Ferret, CCTATGAGACTATGATGAAGGGACACGCTATATTCTGTGGGATAATCATTAACGG TTATC 1201 Porcine CCTATGAAACCCTAATGAAAGGTCATGCAATTTTCTGCGGGATAATCATTAGCGG ATTCC 1201 Phyllostomus CTTATGAGACTCTAATGAAAGGTCATGCAATATTTTGTGGGATCATAATCAGCGG CTTTC 1201 Hendra ACACA 1435 Nipah GGGATAGACACGGAGGAGCCTGGCCTCTTTTACCTCCCGCACATGCATCTAA ACATA 1435 Niniventer GAGATAGACATGGCCGTGTATGGCCACCATTAGAGCTTCCTTTACATGCAAGTGA GAAAA 1276 Berylmys GGGATAGACATGGTGGATCTTGGCCGCCATGTACCCTACCATCTCATGCAGATGA GAAGA 1276 GGGACAGGCATGGTGCATGGCCTCCTTGTGTGCTGCCAGATCATGCAGATGA Gierle ACGTG 1276 GAGACCGCCACGGGGGAACATGGCCTCCTGTGGAGTTACCAAATCATGCATCTGC Feline TGTAA 1283 GTGATAGGCACGGAGGTAGTTGGCCTCCGATTTCCCTTCCGACTCATGCATCTTC Dolphin AATAG 1261 Saiga_antelope, GGGACCGACATGGCGGCAGCTGGCCCCTGTTGCACTGCCAGAACATGCCTCTGC TGCGA 1261 Goitered_gazelle, GGGACCGACATGGCGGCAGCTGGCCCCTGTTGCACTGCCAGAACATGCCTCTGC TGCGA 1261 Domestic_sheep, GGGACCGACATGCCGCCAGCTGCCCCCTGTTGCCAGCAACATGCTTCTGC TGCGA 1261 Wild_goat, GGGACCGACATGGCGGCAGCTGGCCCCCTGTTGTATTGCCGGAACATGCTTCTGC TGCGA 1261 Bharal, GGGACCGACATGGCGGCAGCTGGCCCCCTGTTGCATTGCCAGAACATGCTTCTGC TGCGA 1261 Domestic_goat, GGGACCGACATGGCGGCAGCTGGCCCCCTGTAGCATTGCCGGAACATGCTTCTGC TGCGA 1261 Measles GTGACAGGCACGGAGGCAGTTGGCCACCCTGACCCTCCCCCTGCATGCTGCAGA CACAA 1283 GGGACAGGCATGGAGGGAGCTGGCCACCCATCCACCTCCCTGTGCATGCCGCCAC Rinderpest CTCTA 1261 Phocine_distemper_north_sea GAGACAGACATGGAGGAACCTGGCCTCCGATGGATCTCCCTGTACATGCGTCACC TTTGA 1283 Phocine_distemper_caspian_sea, GGGATAGACATGGGGGAACTTGGCCTCCGATGGATCTTCCTGTTCATGCATCTCC CATCA 1261 Dog_canine_distemper GGGATAGACATGGGGGGACTTGGCCTCCGATGGATCTTCCTGTTCATGCATCTCC TATCA 1261 Ferret, GGGATAGACATGGGGGGACTTGGCCTCCGATGGATCTTCCTGTTCATGCATCTCC TATCA 1261 GGGACCGCATGGAGGAGTTGGCCCCCTTTGATTCTCCCTGAGCATGCTTCACC Porcine AGTAG 1261 Phyllostomus GGGACAGGCATGGGGGGAGCTGGCCTCCTCTAACCCTTCCAGAGCATGCTTCACC CGTGG 1261 * ** * ** * ** **** * ** **** Hendra TAATAAGACTCAAGAATTCTGGTGAATCATTAACAGTTGATGATTGTGTTAAGAA CTGGG 1495

TAATCCGTTTGAAAAATTCTGGGGAATCTTTGACCATTGATGACTGTGTCAAGAA

TAACACAGCTTAGGAACAACGGGGAGGCTTTAAGTGATGCGATCTGTGTAGAAAA

alignments.txt CTGGA 1336 Berylmys TTGGA 1336 Gierle CTGGA 1336 Feline CTGGA 1343 Dolphin TTGGA 1321 Saiga antelope, CTGGA 1321 Goitered_gazelle, CTGGA 1321 Domestic_sheep, TTGGA 1321 Wild_goat, TTGGA 1321 Bharal, CTGGA 1321 Domestic_qoat, CTGGA 1321 Measles CTGGA 1343 Rinderpest CTGGA 1321 Phocine_distemper_north_sea CTGGA 1343 Phocine_distemper_caspian_sea, CTGGA 1321 Dog_canine_distemper TTGGA 1321 Ferret, TTGGA 1321 Porcine 1321 TTGGA Phyllostomus

Hendra

TTGGA

1321

TTTGA 1555 Nipah TCTGA 1555 Niniventer TCTAT 1396 Berylmys CCTAA 1396 Gierle TCTCA 1396 Feline 1403 CCTTA Dolphin CCTGA 1381 Saiga_antelope, TTTGA 1381 Goitered_gazelle, TTTGA 1381 Domestic sheep, 1381 TTTGA Wild_goat, TTTGA 1381 Bharal, TTTGA 1381 Domestic_goat, TTTGA 1381 Measles TCTGA 1403

TAATACATCTTAAAAACAATGGGGAAGCACTTACTGATGCCTTATGTATTGAGCA TTCAACATCTCAAGAACAATGGTGAGGCATTGACAGATGCAATTTGTATTGAAAA TTAGAAATGCCCAGTTATCTGGAGAAGGGTTAACATCTGAACAATGTGCTCAACA TTAGGAATGCCCTGGCTTCAGGTGAGGGATTGACCTACAGTCAATGTATTGATAA TCCGGAATGCGCAGGCATCAGGTGAGGGACTGACCCATGACCTGTGTATAGACAA TCCGGAATGCGCAGGCATCAGGTGAGGGACTGACCCATGACCTGTGTATAGACAA TCCGGAATGCGCAGGCATCAGGTGAGGGACTGACCCATGACCTGTGTATAGACAA TCCGGAATGCACAGGCATCAGGTGAGGGACTGACCCATGACCTGTGTATAGACAA TCCGGAATGCGCAGGCATCAGGTGAGGGACTGACCCATGACCTGTGTATAGACAA ${\tt TCCGGAATGCGCAGGCATCAGGTGAGGGACTGACCCATGACCTGTGTATAGACAA}$ ${\tt TCCGGAATGCTCAAGCTTCAGGTGAAGGGTTAACACATGAGCAGTGCGTTGATAA}$ TAAGGAATGCTCAGGCTTCGGGTGAAGGGTTGACGTATGAGCAGTGTGTCGATAA TCAGAAACGCGTGTGTCTCAGGGGGAGGGAATAACATACAGTCAATGTGTAGAAAA TCAGAAATGCTCATGCCTCAGGGGAGGGAATCACCTATAGTCAATGTATAGAAAA TCAGAAATGCTCATGCCTCAGGGGAGGGAATCACCTATAGTCAATGTATAGAAAA TCAGAAATGCTCATGCCTCAGGGGAGGGAATCACCTATAGTCAATGTATAGAAAA TTAAAAACGCCCAGGCTTCAGGTGAAGGGCTAACATACAGCCAGTGTGTTGACAA TTAGAAATGCTCAGACATCGGGAGAAGGGTTAACATATAGTCAGTGTGTGGATAA

17

AGTCATTTTGTGGGATTCAATTTGATTGCTTTATGGAGTTAAAATTAGACAGTGA AATCATTCTGTGGGATTCAATTTGATTGTTTCATGGAGCTGAAATTGGACAGTGA AGAGTTTTTGTGGTATTCATTTCAAATGCTTCATGCCTTTATCTCTTGACAGTGA CTTCTTTGTCGGATTTCACTTTAAGTGCTTTATGCCCTTAGAGTTAGATAGTGA AAAGCTTTGCAGGGTTTCACTTTAAGTGTTTTATGCCTCTAGAGCTAGATAAGGA GATCCTTTTGTGGATTTAGATTTAAATGTTTTATGCCATTGAGTCTAGATAGTGA GGTCATTTGCTGGGGTTAAGTTTGGGTGTTTCATGCCCTTGAGCCTAGATAGTGA AATCCTTTGTTGGATTCAAATTTGGCTGCTTTATGCCACTCAGCCTAGATAGTGA AATCCTTTGTTGGATTCAAATTTGGCTGCTTTATGCCACTCAGCCTAGATAGTGA AGTCCTTTGTTGGATTCAAATTTGGCTGCTTTATGCCACTCAGCCTAGATAGTGA AGTCCTTTGTTGGATTCAAATTTGGCTGCTTTATGCCACTCAGCTTAGATAGTGA AATCCTTTGTTGGATTCAAATTTGGCTGCTTTATGCCACTCAGCCTAGATAGTGA AATCCTTTGTTGGATTCAAATTTGGCTGCTTTATGCCACTCAGCCTAGATAGTGA AATCATTTGCTGGAGTGAGATTTGGCTGTTTTATGCCTCTTAGCCTGGACAGTGA

TAATG 1516

```
Rinderpest
                                 AGTCATTTGCCGGTGTAAGGTTTGGCTGCTTCATGCCCCTGAGTTTAGACAGTGA
CCTTA
      1381
Phocine_distemper_north_sea
                                 AATCATTTGCAGGGATTAAATTCAGATGCTTTATGCCCTTGAGTTTGGATAGCGA
TTTAA
       1403
Phocine_distemper_caspian_sea,
                                 AATCCTTTGCAGGAATTCGATTTAAATGCTTTATGCCTCTTAGCCTAGACAGTGA
TTTGA
       1381
Dog_canine_distemper
                                 AATCCTTCGCAGGAATTCGATTTAAATGCTTTATGCCTCTTAGCCTAGACAGTGA
TTTGA
       1381
Ferret,
                                 AATCCTTCGCAGGAATTCGATTTAAATGCTTTATGCCTCTTAGCCTAGACAGTGA
TTTGA
       1381
                                 AATCATTCGTGGGTATGAGGTTTAAGTGTTTTATGCCCTTGAGCCTTGACAGTGA
Porcine
CCTAA
      1381
Phyllostomus
                                 AGTCCTTCGTCGGGATTAAGTTTAAGTGCTTCATGCCTCTGAGTCTTGACAGTGA
TTTGA 1381
                                                          ** ** ***
                                 GCATGTATATGAAAGATAAAGCACTATCCCCAATAAAGGAGGAATGGGATAGTGT
Hendra
CTATC
       1615
Nipah
                                 GTATGTATATGAAAGATAAAGCTTTATCTCCAATCAAAGACGAATGGGACAGTGT
ATACC
       1615
Niniventer
                                 CAATGTATCTCAAAGATAAAGCTCTTGCTGCTTTAAAGAAGGAGTGGGATTCTGT
TTACC
       1456
Berylmys
                                 TTACC
       1456
                                 Gierle
CTATC
       1456
                                 CAATGTACCTTAGAGACAAGGCGCTGTCACCTGTCAGAAATGAGTGGGATTCAGT
Feline
       1463
TTATG
                                 Dolphin
       1441
TTACC
Saiga_antelope,
                                 CCATGTATCTCAAAGACAAGGCATTGGCTGCACTGAAGAATGAGTGGGATTCAGT
TTACC
      1441
Goitered_gazelle,
                                 CCATGTATCTCAAAGACAAGGCATTGGCTGCACTGAAGAATGAGTGGGATTCAGT
TTACC
       1441
                                 CCATGTACCTCAAAGACAAGGCATTGGCTGCACTGAAGAATGAGTGGGATTCAGT
Domestic_sheep,
TTACC
      1441
Wild_goat,
                                 CCATGTACCTCAAAGACAAGGCATTGGCTGCACTGAAGAATGAGTGGGATTCAGT
TTACC 1441
Bharal,
                                 CCATGTATCTCAAAGACAAGGCATTGGCTGCACTGAAGAATGAGTGGGATTCAGT
TTACC
       1441
Domestic_goat,
                                 CTATGTACCTCAAAGACAAGGCATTGGCTGCACTGAAGAATGAGTGGGATTCAGT
TTACC
      1441
Measles
                                 CAATGTACCTAAAGGACAAGGCACTTGCTGCTCTCCAAAGGGAATGGGATTCAGT
TTACC 1463
Rinderpest
                                 CTATGTACTTAAAGGACAAGGCTCTAGCAGCTCTCAAAAAGGAATGGGACTCCGC
TTATC
      1441
Phocine_distemper_north_sea
                                 CCATGTACCTCAAAGATAAAGCCCTGGCAGCCCTTAAAAAAGAGTGGGATTCAGT
ATACC
       1463
Phocine_distemper_caspian_sea,
                                 CCATGTACCTGAAAGATAAGGCTTTGGCAGCCCTAAGAAAAGAGTGGGACTCAGT
GTACC
       1441
Dog_canine_distemper
                                 CCATGTACCTGAAAGATAAGGCTTTGGCAGCCCTAAGAAAAGAGTGGGACTCAGT
GTACC
      1441
Ferret,
                                 CCATGTACCTGAAAGATAAGGCTTTGGCAGCCCTAAGAAAAGAGTGGGACTCAGT
GTACC
       1441
Porcine
                                 CAATGTATCTAAAAGATAAGGCTTTATCTGCCCTCAGGAAAGAGTGGGACTCTGT
GTATC
       1441
Phyllostomus
                                 CTATGTACTTGAAAGATAAGGCACTATCGGCCCTTAAGAAGGAATGGGACTCCGT
CTATC
      1441
                                              ** ** **
                                                                        ** ****
* *
Hendra
                                 CACGTGAAGTACTTAATTACACGCCACCCAGATCTACCGAACCAAGAAGATTGGT
GGATG
      1675
Nipah
                                 CACGTGAAGTGTTGAGCTATACCCCACCGAAGTCAACCGAGCCAAGAAGATTGGT
TGACG
       1675
Niniventer
                                 CAAAAGAATACATGAAATATTCACCATCACCTGCTTCTGTCTCAAGAAGATTAGT
```

Berylmys TTCGG 1516 Gierle TAATG 1516 Feline AAATG 1523 Dolphin CAATG 1501 Saiga_antelope, AGAGG 1501 Goitered_gazelle, AGAGG 1501 Domestic_sheep, 1501 GGAGG Wild_goat, GGAGG 1501 Bharal, GGAGG 1501 Domestic_goat, GGAGG 1501 Measles AGATG 1523 Rinderpest CGATG 1501 Phocine_distemper_north_sea CAATG 1523 Phocine_distemper_caspian_sea, 1501 TAATG Dog_canine_distemper TAATG 1501 Ferret, TAATG 1501 Porcine TAATG 1501 Phyllostomus CAATG 1501

Hendra 1735 AGGAG Nipah CGGTG 1735 Niniventer TGGTG 1576 Bervlmvs TGGTG 1576 Gierle AGGAG 1576 Feline TGGTG 1583 Dolphin 1561 TGGCT Saiga_antelope, TGGCT 1561 Goitered_gazelle, TGGCT 1561 Domestic sheep, TGGCT 1561 Wild_goat, TGGCT 1561 Bharal, TGGCT 1561 Domestic_goat, TGGCT 1561 Measles

TGGAG 1583 Rinderpest AAAGAGATGTCTTAAGATATAAGCCTCCTAGAGGAACAACATCAAGAAGATTAGT AGCCTGATGTCATGCGTTATCGACCTCCAAGAGGGACAACATCTCGTAGGCTTGT CTAAGGAGTATTTAAGGTATAATCCAGGATTACCCACAAGTTCCAGAAGATTGGT CAAAGGAATACCTTCGTTATAATCCTCCCAAGCCGACAGGATCGAGAAGACTGGT CGAAGAATACCTCCGTTATAACCCACCTAGAGGGACAGAGTCAAGGCGATTGGT CGAAAGAATACCTCCGTTATAACCCACCTAGAGGGACAGAGTCAAGGCGATTGGT CGAAGGAATACCTCCGTTATAACCCACCTAGGGGGACAGAGTCAAGGCGATTGGT CGAAAGAATACCTCCGTTATAACCCACCTAGAGGGACAGAGTCAAGGCGATTGGT CGAAAGAATACCTCCGTTATAACCCACCTAGAGGGACAGAGTCAAGGCGACTGGT CGAAAGAATACCTCCGTTATAACCCACCTAGAGGGACAGAGTCAAGGCGACTGGT ${\tt CGAAAGAGTTCCTGCGTTACGATCCTCCCAAGGGAACCGGGTCACGGAGGCTTGT}$ CGAAAGAATTCCTCCGCTATAACCCACCTAAGAGTACTAGTTCACGGAGGCTAGT CAAAGGAGTTTCTCAGGTATAATCCTCCTCGCTCAACCGAGTCCCGAAGGCTGGT CAAAAGAATTCCTCAGGTACAATCCACCTCGCTCCACTGAGTCTCGGAGACTTGT CAAAAGAATTCCTCAGGTACAATCCGCCTCGCTCCACTGAGTCTCGGAGACTTGT CAAAAGAATTCCTCAGGTACAATCCACCTCGCTCCACTGAGTCTCGGAGACTTGT CGAAAGAATATCTACGGTACAACCCCCCAAGTCCTCGGGATCTAGAAGATTAGT CAAAGGAGTACTTAAGGTACAACCCTCCCAGATCAACAAGTTCAAGGCGACTAGT ** ** * * * * **

CGGTG TATTCTTGGAGGACGCCGAATTTGACCCATACAACATGATCATGTACGTAATTTC Phocine_distemper_north_sea TGGCC 1583 Phocine_distemper_caspian_sea, TGTTTCTAGAGGACTCTCAGTTTGACCCTTATAACATGATTATGTACGTTATCTC AGGTC 1561 Dog_canine_distemper TGTTTCTAGAGGACTCTCAGTTTGACCCTTATAACATGATTATGTACGTTATCTC AGGTC 1561 Ferret, TGTTTCTAGAGGACTCTCAGTTTGACCCTTATAACATGATTATGTACGTTATCTC AGGTC 1561 Porcine TGGAG 1561 Phyllostomus TTTTTCTTGAAGATTCTGACTTCGATCCTTACAACATGATCATGTACGTTATCTC TGGTG 1561 ** ** ** ** * *** * Hendra TAAAC 1795 Nipah CTTATCTCGAGGATGAACAATTCAATGTTTCTTATAGCTTGAAGGAGAAAGAGAC GAAGC 1795 Niniventer TAAAG 1636 Berylmys AAAAT 1636 Gierle AATATCTTAGTGATCCTGACTTCAATCTGTCATATAGTCTCAAGGAGAAAGAGAT TAAGC 1636 Feline TAAAG 1643 CCTATTTGGAAGACCCTGATTTCAACTTATCTTACAGCCTAAAAGAAAAAGAGAT Dolphin TAAAG 1621 CCTACCTTAAAGACCCTGAGTTTAACCTCTCATACAGCCTAAAAGAGAAGGAGAT Saiga_antelope, AAAGG 1621 Goitered_gazelle, CCTACCTTAAAGACCCTGAGTTTAACCTCTCATACAGCCTAAAAGAGAAGGAGAT AAAGG 1621 CCTACCTTAAAGACCCTGAGTTTAATCTCTCATACAGCCTAAAAGAGAAGGAGAT Domestic_sheep, AAAGG 1621 Wild_goat, CCTACCTTAAAGACCCTGAGTTTAATCTCTCATACAGCCTAAAAGAGAAGGAGAT AAAGG 1621 Bharal, CCTACCTTAAAGACCCTGAGTTTAATCTCTCATACAGCCTAAAAGAGAAGGAGAT AAAGG 1621 Domestic_goat, CCTACCTTAAAGACCCTGAGTTTAATCTCTCATACAGCCTAAAAGAGAAGGAGATAAAGG 1621 Measles CAAGG 1643 Rinderpest ATTACCTCCGAGACCCTGACTTCAATTCATCTTATAGCCTAAAGGAAAAGGAAAT TAAAG 1621 Phocine_distemper_north_sea AGTATTTAAAGGACCCTGATTTCAATCTCTCATATAGTCTTAAAGAAAAAGAGAT TAAGG Phocine_distemper_caspian_sea, AATATCTAGAAGATCCTGATTTCAACCTATCATACAGTCTCAAAGAGAAAGAGAT TAAAG 1621 Dog_canine_distemper AATATCTAGAAGATCCTGATTTCAACCTATCATACAGTCTCAAAGAGAAAGAGAT 1621 TAAAG Ferret, AATATCTAGAAGATCCTGATTTCAACCTATCATACAGTCTCAAAGAGAAAGAGAT TAAAG 1621 Porcine CAAAG 1621 Phyllostomus AGTACCTTCATGATCCAGAGTTCAATTTATCATACAGCCTTAAAGAAAAGGAAAT TAAAG 1621 ** * ** ** ** ** ** * * ** ** ** * ** Hendra AAGCAGGAAGATTATTTGCTAAAATGACATATAAGATGCGTGCCTGTCAGGTAAT TGCTG 1855 Nipah AAGCTGGACGATTGTTCGCAAAGATGACCTACAAAATGCGTGCATGTCAAGTCAT AGCAG 1855 AGGTGGGTAGGTTATTTGCAAAGATGACCTATAAAATGAGAGCATGCCAAGTGAT Niniventer AGCAG 1696 Berylmys TAGTTGGAAGGTTATTTGCCAAGATGACATACAAAATGAGAGCATGCCAAGTAAT

AGCAG 1696 Gierle TGCGG 1696 Feline AGCTG 1703 Dolphin TGCAG 1681 Saiga_antelope, CGCTG 1681 Goitered gazelle, CGCTG 1681 Domestic_sheep, CGCTG 1681 Wild_goat, CGCTG 1681 Bharal, TGCTG 1681 Domestic_goat, CGCTG 1681 Measles CGCTG 1703 Rinderpest AGCCG 1681 Phocine_distemper_north_sea CGCAG 1703 Phocine_distemper_caspian_sea, AGCAG 1681 Dog_canine_distemper 1681 AGCAG Ferret, 1681 AGCAG Porcine TGCTG 1681 Phyllostomus TGCAG 1681 ** * Hendra AGATG 1915 Nipah GGATG 1915 Niniventer AGATG 1756 Berylmys AGATG 1756

Gierle AGATG 1756 Feline AGATG 1763 Dolphin 1741 AGATG Saiga_antelope, GGACG 1741 Goitered_gazelle, GGACG 1741 Domestic_sheep, GGACG 1741 Wild_goat, 1741 GGACG Bharal, GGACG 1741 Domestic_goat, GGACG 1741 Measles 1763 GGATG Rinderpest

AGATG

1741

AGGTAGGGAGACTGTTCGCAAAAATGACATACAAAATGAGGGCTTGTCAAGTCAT AGGTAGGTCGATTGTTTGCTAAAATGACCTATAAGATGAGGGCTTGTCAAGTAAT AAGTTGGGAGACTATTTGCCAAAATGACCTACCAAATGAGGGCTTGCCAAGTCAT AGACAGGGCGGTTGTTTGCCAAAATGACCTATAAGATGCGGGCCTGTCAGGTAAT AGACAGGGCGGTTGTTTGCCAAAATGACCTATAAGATGCGGGCCTGTCAGGTAAT AGACAGGGCGGTTGTTTGCCAAAATGACCTATAAGATGCGGGCCTGTCAGGTAAT AGACAGGGCGGTTGTTCGCCAAAATGACCTATAAGATGCGGGCCTGTCAGGTAAT AGACAGGGCGGTTGTTTGCCAAAATGACTTATAAGATGCGGGCCTGTCAGGTAAT AGACAGGGCGGTTGTTTGCCAAAATGACCTATAAGATGCGGGCCTGTCAGGTAAT AAACAGGTAGACTTTTCGCTAAAATGACTTACAAAATGAGGGCATGCCAAGTGAT AGACTGGGAGACTCTTTGCCAAAATGACTTACAAGATGAGAGCATGTCAGGTTAT AGGTAGGTAGATTGTTCGCGAAAATGACATATAAAATGAGAGCATGTCAAGTCAT AGGTAGGGAGGCTATTCGCTAAAATGACCTACAAAATGCGAGCCTGTCAGGTCAT AGGTAGGGAGATTATTCGCTAAAATGACCTACAAAATGCGAGCCTGTCAGGTCAT AGGTAGGGAGATTATTCGCTAAAATGACCTACAAAATGCGAGCCTGTCAGGTCAT AAGTCGGGAGGCTATTCGCAAAAATGACATACAAGATGAGAGCATGCCAGGTGAT AAGTAGGTAGGCTGTTTGCCAAAATGACCTACAAGATGAGAGCATGTCAGGTCAT

AAGCTTTGATTGCATCGGGAGTGGGCAAGTATTTTAAAGAGAACGGGATGGTTAA
AGGCCCTGATAGCCTCAGGTGTCGGTAAATATTTTAAAGAGAACGGGATGGTTAA
AGAATTTAATATCTAACGGCGTAGGAAGATCTTTAAAGGACAATGGGATGGCAAA
AAAACTTGATTGCTAATGGAGTACGGTAAGTTCTTCCGAGATAACGGGATGGCAAA
AGAATCTGATAGCCAATGGTATCGGTAAGTTCTTCCGAGATAACGGGATGGCTAA
AAAACCTGATTGCCAATGGAGTAGGGAAGTTTTTCAAAGATAATGGAATGGCAAA
AGAATTTAATATCAAATGGAATAGGGAAGTATTTCAAAGACAACGGTATGGCCAA
AAAATCTGATATCGAATGGTGTTGGGAAGTATTTCCGAGACAATGGGATGGCAAA
AAAATCTGATATCGAATGGTGTTGGGAAGTATTTCCGAGACAATGGGATGGCAAA
AAAATCTGATATCGAATGGTGTTGGGAAGTATTTCCGAGACAATGGGATGGCAAA
AAAATCTGATATCGAATGGTGTTGGGAAGTATTTCCGAGACAATGGGATGGCAAA
AAAATCTGATATCGAATGGTGTTGGGAAGTATTTCCGAGACAATGGGATGGCAAA
AAAATCTGATATCGAATGGTGTTGGGAAGTATTTCCGAGACAATGGGATGGCAAA
AAAATCTGATATCGAATGGTGTTGGGAAGTATTTTCCGAGACAATGGGATGGCAAA
AAAATCTGATATCCAAACGGGATTGGCAAGTATTTTAAGGACAATGGGATGGCAAA
AAAACCTGATTCCCAATGGTATCGGGAAGTATTTTAAGGACAATGGGATGGCAAA

```
Phocine_distemper_north_sea
                                    AAAACCTGATATCAAACGGGATTGGGAAGTACTTCAAAGATAACGGGATGGCAAA
AGATG
       1763
                                    AAAACTTGATATCTAATGGAATTGGGAAGTACTTCAAGGACAATGGGATGGCAAA
Phocine_distemper_caspian_sea,
       1741
GGATG
                                    AAAACTTGATATCTAATGGAATTGGGAAGTACTTCAAGGACAATGGGATGGCAAA
Dog_canine_distemper
GGATG
       1741
Ferret,
                                    AAAACTTGATATCTAATGGAATTGGGAAGTACTTCAAGGACAATGGGATGGCAAA
GGATG
       1741
Porcine
                                    AAAACTTAATCGCCAATGGTATAGGAAAGTATTTCAAGGATAACGGCATGGCAAA
       1741
AGACG
Phyllostomus
                                    AGAATCTGATTTCCAACGGGATAGGTAAGTATTTTAAGGATAACGGAATGGCAAA
AGATG
       1741
                                                         * ** *
** *
                                    AACATGAGCTACTCAAAACTTTATTTCAACTGTCAATCTCTTCAGTACCTCGAGG
Hendra
CAATA
       1975
                                    AGCACGAACTTTTGAAGACACTCTTCCAATTGTCTATTTCCTCAGTTCCTCGAGG
Nipah
GAACA
       1975
Niniventer
                                    AACATGAATTAACAAAAGCACTCCACACTCTTTCATTATCATCAATCCCTAAGGA
TCTTA
       1816
Bervlmvs
                                    AGCATGATCTCACTAAAGCCCTCCATACTTTAGCTATATCATCAATTCCTAAGGA
TGGCA
       1816
Gierle
                                    AGCATGAGCTGACAAAAGCCTTGCACACACTAGCCATTTCCTCAGTCCCAAAAGA
CAACA
       1816
                                    AACATAAATTAACTAAGACGTTACACAAATTAGCCATTTCAGGTGTACCTAAAGA
Feline
TAATT
       1823
                                    AACATGATCTTACAAAGGCACTCCACACACTAGCGGTTTCAGGTATACCTAAGAA
Dolphin
CAAAA
       1801
                                    AGCATGACCTAACAAAAGCCCTTCACACCCTGGCAGTCTCAGGTGTTCCCAAAAA
Saiga_antelope,
CAACA
       1801
Goitered_gazelle,
                                    AGCATGACCTAACAAAAGCCCTTCACACCCTGGCAGTCTCAGGTGTTCCCAAAAA
CAACA
       1801
Domestic sheep,
                                    AGCATGACCTAACAAAAGCCCTTCACACTCTGGCAGTCTCAGGTGTTCCCAAGAA
CAACA
       1801
Wild_goat,
                                    AGCATGACCTAACAAAAGCCCTTCACACTCTGGCAGTCTCAGGTGTTCCCAAGAA
CAACA 1801
Bharal,
                                    AGCATGACCTAACAAAGCCCTTCACACCCTGGCAGTCTCAGGTGTTCCCCAAGAA
CAACA
       1801
Domestic_goat,
                                    AGCATGACCTAACAAAAGCCCTTCACACCCTGGCAGTCTCAGGTGTTCCCAAGAA
CAACA 1801
Measles
                                    AGCACGATTTGACTAAGGCACTCCACACTCTGGCTGTCTCAGGAGTCCCCAAAGA
TCTCA 1823
Rinderpest
                                    AGCATGACCTCACTAAAGCTCTCCATACATTGGCAGTCTCAGGAGTTCCAAAGGA
TTTTA
       1801
Phocine_distemper_north_sea
                                    AACACGACCTAACTAAAGCCTTACATACTTTGGCTGTATCTGGAGTTCCCAAGGA
CAAAA
       1823
Phocine_distemper_caspian_sea,
                                    AACACGATCTCACTAAAGCATTGCACACTCTGGCTGTGTCCGGGGTTCCGAAAGA
CAAGA
       1801
Dog_canine_distemper
                                    AACACGATCTCACTAAATCATTGCACACTCTGGCTGTGTCCGGGGTTCCGAAAGA
       1801
CAAGA
Ferret,
                                    AACACGATCTCACTAAATCATTGCACACTCTGGCTGTGTCCGGGGTTCCGAAAGA
       1801
CAAGA
Porcine
                                    AACATGACCTAACAAAAGCATTACATACCCTGGCTGTCTCTGGGGTCCCCAAAGA
TAAAT
       1801
Phyllostomus
                                    AGCATGACTTAACCAAAGCTTTACACACTTTAGCAGTCTCAGGAGTTCCTAAGGA
CAAAT
       1801
                                                  **
Hendra
                                    GTCAGGGCAGAGATTCCGAATTTCCAATAACACAGAGAAAAGTCTCATATCACT
CAAGA
       2035
Nipah
                                    GTCAGGGTAATGATCCTCAATCCATCAATAATATAGAAAGAGATTTCCAATACTT
       2035
TAAAG
Niniventer
                                    GTCATAATTATAAAGGTGGGCCGATTCAACATCATAAGCTTAAACATAGGT----
       1867
Berylmys
                                    AGTTTAATCATAAAAATTACACCAATTCCAATACTAGAGTTCAATTAGAAG----
      1867
```

alignments.txt Wed Dec 18 07	7:53:28 2024 23	
Gierle 1867	AACTTGGTCACAAAACACACCTAGAGTTTGAGGATACTCAATCAGCACACA	
Feline 1874	CTAAACTTTATTTAGATGAATGTTGGGAGCAAGTAATTCGACAATGTTCAA	
Dolphin	AAGATTACCATAGAGGTGAAGGTGGGAGACAGACCAATCCTTGGTGGTTTG	
Saiga_antelope,	AAGATAACCACCGAGGTGGGCCTCCCAGAAGGACAACAAACCGAGGGGTGA	
1852 Goitered_gazelle,	AAGATAACCACCGAGGTGGGCCTCCCAGAAGGACAACAAACCGAGGGGTGA	
1852 Domestic_sheep,	AAGATAACCACCGAGGTGGCCCTCCCAGAAGAACAACAAACCGAGAGGTGA	
1852 Wild_goat,	AAGACAACCACCGAGGTGGGCCTCCCAGAAGAACAACAAACCGAGAGATGA	
1852 Bharal,	AAGATAACCACCGAGGTGGGCCTCCCAGAAGGACAACAAGCCGAGAGGTGA	
1852 Domestic_goat,	AAGATAACCACCGAGGTGGGCCTCCCAGAAGGACAACAGGCCGAGAGGTGA	
1852 Measles	AAGAAAGTCACAGGGGGGGGCCAGTCTTAAAAACCTACTCCCGAAGCCCAG	
1874 Rinderpest	AAGATAATTACCGCGGTGGACCCAGGGCCAAGACTTTCTCCTCCAAGAAGA	
1852 Phocine_distemper_north_sea	AAGACTCTCATCGTGGGTTTAATAAACAACAAGATCATTCAACTCCGAAC	
1874 Phocine_distemper_caspian_sea,	AAGACTTCCATCGTGGCCTCACTAACCAGAGTAAATCCCTGAAACCTGCAC	
1852 Dog_canine_distemper	AAGATTCCCATCGTGGCCTCACTAACCAGCGTAAATCCCTGAAGCCTGCAC	
1852 Ferret,	AAGATTCCCATCGTGGCCTCACTAACCAGCGTAAATCCCTGAAGCCTGCAC	
1852 Porcine	CCCAAAAGCACCGAGACCCCAGAACTAAAATAGATAACCACTATAATAGAG	
1852 Phyllostomus 1852	CTCAAAAACATCGTGACCCTAGAGTTCAAAAAGGCCACCTGTATGAAACAA	
Hendra	GAACAACAGGTAGGCTTCTGAATAATGAAGTTCCTTGTCGAATGAACATTATGT	ГC
GGCTT 2095 Nipah	GGGTCACTACCAATGTGAAAGACAAAAAGAATAACTCTTTTAATAAGGTTAAAT	
TGCTC 2095	CTGGTGCAATAAAGAGGAA	
Niniventer 1886	ATAATC	
Berylmys 1873		
Gierle 1875	ACAATTTG	
Feline 1893	GTAGTACACAGATAAGGGA	
Dolphin 1860	GTGACAAG	
Saiga_antelope, 1860	GATCAAGC	
Goitered_gazelle, 1860	GATCAAGC	
Domestic_sheep, 1860	GATCAAGC	
Wild_goat, 1860	GATCAAGC	
Bharal, 1860	GATCAAGC	
Domestic_goat, 1860	GATCAAGC	
Measles 1882	TCCACACA	
Rinderpest 1860	T	
Phocine_distemper_north_sea	A	

alignments.txt wed Dec 18 0	7:55:28 2024	24	
1882 Phocine_distemper_caspian_sea,	CTTATCG		A
1860 Dog_canine_distemper	CTTATCG		A
1860			A
Ferret, 1860			
Porcine 1860			G
Phyllostomus 1860	AACAGCA		AA
Hendra AAATC 2155 Nipah AAATC 2155			AATATTCTCCCAAACACACG AACATGTCACCCAATACACG
NiniventerACG 1910		AG-AGAAAT	ATTTCCCTTCGGA-
BerylmysAT 1880			GTTCG
Gierle		T-CACAAT	CTCAGCAGTCCAA-
TGC 1898 Feline	A	CAGACTATG	AATTCACAATCAAATAGGGA
AATTG 1928 Dolphin		TCAAAGATT	AATAAGCGAC
ATG 1882 Saiga_antelope,		CAAGGCACC	AAAACACAAG
ATA 1882 Goitered_gazelle,		CAAGGCACC	AAAACACAAG
ATA 1882 Domestic_sheep,		CAAGACACC	AAAACACAAA
ATA 1882 Wild_goat,		CAAGACACC	AAAACACAAA
ATA 1882 Bharal,		CAAGACACC	AAAACACAAA
ATA 1882 Domestic_goat,		CAAGACACC	AAAACACAAA
ATA 1882 Measles		AGTACCAGG	AACGTTAAAG
CAG 1904 Rinderpest		GGGGCTGGT	ATCTCAAGGG
TGT 1882 Phocine_distemper_north_sea		AAGACACTG	CACCCTAGTT
CAC 1904 Phocine_distemper_caspian_sea,		GGAGCACTT	CACTCCGTCT
CTT 1882 Dog_canine_distemper		GGAACCCGT	CACTCCGTCT
CTT 1882 Ferret,		GGAGCCCTT	CACTCCGTCT
CTT 1882 Porcine		GGTCTCCCA	AAATGTCAAC
TTG 1882 Phyllostomus		AAAGCAGAA	AGTGACATCC
ACA 1882			
Hendra TCCCT 2215	GCCACAAGTGTGATAAC	CACTAGCCAAACATTCCTT	GACTATCATATGGAATTCAG
Nipah TCCTC 2215	GTTATAAGTGTAGTAAT	CACAAGTAAGTCTTTTCTC	GATTATCATACCGAGTTTAA
Niniventer 1934	AG-TTATCTCT	CAC	CACACCCTTGC-
Berylmys 1904	TA-GCACCATA	TCT	TATAAAGGTCA-
Gierle	AA-GTGCCAAG	TCA	TACACTCGTCA-

alignments.txt Wed Dec 18 07	7:53:28 2024 25
1922 Feline	AATCAAAGTCTTCTAGGGCACGTCTTAATAATAGAG-
1964 Dolphin	GA-CAAACCTCAA
1894 Saiga_antelope,	GA-GACAAGGTTC
1894 Goitered_gazelle, 1894	GA-GACAAGGTTC
Domestic_sheep,	GA-GACAAGGTCC
Wild_goat, 1894	GA-GACAAGGTCC
Bharal, 1894	GA-GACAAGGTCC
Domestic_goat, 1894	GA-GACAAGGTCC
Measles 1916	AA-AAAGGGTTTG
Rinderpest 1894	CT-AGAAATGAGG
Phocine_distemper_north_sea 1916	TT-TCAAACAATC
Phocine_distemper_caspian_sea, 1894	CC-CCAAGTAGTA
Dog_canine_distemper 1894	CC-CCAAGTAGTA
Ferret, 1894	CC-CCAAGTAGTA
Porcine 1894	GA-GGAAAACAGG
Phyllostomus 1894	AT-CGAAGATTTA
Hendra	ACAAGTCAGACAGAATGGATAGGACAGAGACATCTGATTTCTCGAAATATGATGA
TGGAA 2275 Nipah	ACAATCACTATAAATCAGACAATACAGAGGCGGCCGTACTGTCCAGGTATGAGGA
CAACA 2275 Niniventer	AAACCCAGGGAGTAATCAATATCAGATTAATCTG-CAAACATCTTC
TGATG 1984 Berylmys	TAGT-AAAAGCAAATTGAGCCAAAGACAAATTGATGAACA
GTTAA 1948 Gierle	AAAC-CAGAGCCGGATCAGGTCAGGAAAAATCAGTGACATTGATCA
AACAT 1972 Feline	ATATCTTAAAGGGCAAGAGAGATTCGAACAAACAAGTAAAGTATCC
TTCAA 2015 Dolphin	CGGCTCATTCTAATTATGCTGGTGCCGGGTGCGGAATCAAGAATGG
ACATG 1945 Saiga_antelope,	AAGGGGGACCTATGTACAACTATTTGCGATGCCAACCGATCAGCCC
TGATC 1945 Goitered_gazelle,	AAGGGGGACCTATGTACAACTATTTGCGATGCCAACCGATCAGCCC
TGATC 1945 Domestic_sheep,	AAGGGGGCCTGTGTACAACTATTTGCGATGCCAACCAATCAGCCC
TGATC 1945 Wild_goat,	AAGGGGGCCTATGTACAACTATTTGCGATGCCAACCAATCAACCC
TGATC 1945 Bharal,	AAGGAGGACCTATGTACAACTATTTGCGATGCCAACCAATCAGCCC
TGATC 1945 Domestic_goat,	AAGGGGGCCTATGTACAACTATTTGCGATGCCAACCAATCAGCCC
TGATC 1945 Measles	TAGGATTCCCTCATGTAATTCGGCAGAATCAAGACACTGATCATCC
GGAGA 1967 Rinderpest	CAAACTACCGGTCACCCGAACAACGAGGCTGCAACACCGGTGGCCC
CGATC 1945 Phocine_distemper_north_sea CAATG 1967	ATCGTAAGAGTCAGATACCCAACTTCTGTACCAGTAGGCAGGAAGA

CAATG 1967

2092

TGGAC

```
Phocine_distemper_caspian_sea,
                                  CAATG
       1945
                                  ----GATATATAGACCCAAACCCAAATTTTTGCACCAGTAGAAGAGAAGA
Dog_canine_distemper
      1945
CAATG
Ferret,
                                  -----GATATATAGACCCAAACCCAAATTTTTGCACCAGTAGAAGAGAAGA
CAATG
       1945
Porcine
                                  -----GCCCATCAGGACATCGGACGGTTTCATCAGTGGCCGGGCTGATGA
TAATG
      1945
Phyllostomus
                                  ----AGAGTAACAAAGTTAAAAAAGAATTCATTTGCGGAAGAAGCGAGGA
CAATG
      1945
                                  CAGGAACAAATTTGACACGGTGAGTGCTTTCCTAACTACTGACTTGAAGAAATT
Hendra
CTGTC
      2335
Nipah
                                  CTGGGACAAATTTGATACAGTAAGTGCATTTCTTACAACTGATCTTAAGAAATT
CTGTC
       2335
                                  GTAATGATACATATGAGACTTTAAGCGCGTTCATCACAACAGATCTCAAAAAGTA
Niniventer
       2044
TTGTC
Berylmys
                                  CGGGAGTCAATTATGAAACAGTTAGTGCTTTTATAACGGCAGACTTACAGAAATA
TTGCC
       2008
Gierle
                                  CATCTCAAAATTATGAAACAGTGAGTGCTTTCATTACTGCAGACCTGCAAAAGTA
CTGCT
       2032
Feline
                                  ACACCGAGTATTATGAGACTATCAGTAGTTTCATAACTACTGACCTTAAAAAGTA
TTGTC
       2075
                                  ATCAGGAGGCTTACGAGACTGTCAGTGCTTTTATCACGACTGATCTTAAGAAATA
Dolphin
       2005
CTGTT
                                  AGGGTGAGTCATACGAGACTGTTAGTGCATTCATCACCGCTGACCTTAAGAAGTA
Saiga_antelope,
TTGCC
      2005
                                  AGGGTGAGTCATACGAGACTGTTAGTGCATTCATCACCGCTGACCTTAAGAAGTA
Goitered_gazelle,
TTGCC
       2005
                                  AGGGCGAGTCATACGAGACTGTTAGTGCATTCATCACCGCTGACCTTAAGAAGTA
Domestic_sheep,
TTGCC
      2005
Wild_goat,
                                  AAGGTGAGTCATACGAGACTGTTAGTGCATTCATCACCGCTGACCTTAAGAAGTA
TTGCC
      2005
Bharal,
                                  AGGGTGAGTCATACGAGACTGTTAGTGCATTCATCACCGCTGACCTTAAGAAGTA
TTGCC
       2005
Domestic_goat,
                                  AGGGTGAGTCATACGAGACTGTTAGTGCATTCATCACCGCTGACCTTAAGAAGTA
TTGCC 2005
Measles
                                  ATATAGAAACCTACGAGACAGTCAGCGCATTTATCACGACTGATCTCAAGAAGTA
CTGCC 2027
Rinderpest
                                  AGATAGAGAGTTATGAAACAGTTAGTGCTTTTTATCACAGCTGATCTGAAAAAGTA
TTGCC
      2005
Phocine_distemper_north_sea
                                  ACACGGAGATTTACGAGACTGTAAGTGCCTTTATAACCACAGATCTAAAAAAGTA
CTGCC
       2027
Phocine_distemper_caspian_sea,
                                  ACATAGAGATCTATGAAACTGTAAGTGCATTTATAACTACGGATCTCAAAAAGTA
CTGTC
       2005
Dog_canine_distemper
                                  ACATAGAGATCTATGAAACTGTAAGTGCATTTATAACTACAGATCTCAAAAAGTA
CTGTC
       2005
Ferret,
                                  ACATAGAGATCTATGAAACTGTAAGTGCATTTATAACTACAGATCTCAAAAAGTA
       2005
CTGTC
Porcine
                                  ACATAGACCTTTATGAGACTGTAAGTGCTTTTATAACCACTGATCTCAAAAAGTA
      2005
TTGTT
Phyllostomus
                                  ACCCAGATTTGCATGAAACAGTGAGTGCCTTTGTCACCACCGATCTCAAGAAGTA
TTGTC
       2005
 * *
Hendra
                                  TCAATTGGCGATATGAATCCATGGCTATTTTTGCAGAAAGACTTGACGAAATTTA
TGGCT
       2395
                                  TCAATTGGAGATACGAATCAATGGCTATATTTGCTGAACGTCTGGATGAGATATA
Nipah
CGGTT
       2395
Niniventer
                                  TTAATTGGAGGTATGAATCAATTAGTGTTTTTTGCAGAAAGATTAAATGAGATTTA
TGGCC
       2104
Berylmys
                                  TGGGT
       2068
Gierle
                                  TGAACTGGAGGTATGAGACAATTTCCATCTTTGCAGAACGCTTGAATGAGATTTA
```

Phocine_distemper_caspian_sea,

Feline TTAACTGGCGATATGAATCAAGTAGTATGTTTGCAGAGAGACTTAATGAAATTTA 2135 TGGAC Dolphin TAAATTGGAGGTATGAGACAATCAGCATATTTGCCCAGAGACTAAATGAGATTTA 2065 TGGGT Saiga_antelope, TGGAC 2065 Goitered_gazelle, TGGAC 2065 Domestic_sheep, 2065 TGGAC Wild_goat, TGGAC 2065 Bharal, TGGAC 2065 Domestic_goat, TGGAC 2065 TTAATTGGAGATATGAGACCATCAGCTTATTTGCACAGAGGCTAAATGAGATTTA Measles CGGAT 2087 Rinderpest TGAACTGGAGGTATGAGACAATCAGCTTATTTGCTCAAAGGCTAAATGAGATATA CGGGT 2065 Phocine_distemper_north_sea TGAATTGGAGATACGAGACAATCAGCATATTCGCTCAAAGGTTAAATGAAATCTA TGGGC 2087 Phocine_distemper_caspian_sea, TGAATTGGCGTTATGAGACCATCAGTATTTTTGCTCAGAGATTAAATGAAATCTA CGGTC 2065 Dog_canine_distemper TGAATTGGCGTTATGAGACCATCAGTATTTTTGCTCAGAGATTAAATGAAATCTA TGGTC 2065 Ferret, TGAATTGGCGTTATGAGACCATCAGTATTTTTGCTCAGAGATTAAATGAAATCTA 2065 TGGTC TAAATTGGCGTTATGAGACAATAAGCATCTATGCCCAGAGGTTAAATGAGATTTA Porcine TGGAC 2065 Phyllostomus TAAATTGGCGTTATGAAACAATCAGTATATATGCTCAGAGATTGAACGAGATTTA CGGGC 2065 * ** *** * ** * * Hendra CGCAG 2455 Nipah TACCTGGATTTTTTAATTGGATGCACAAACGACTAGAAAGATCTGTTATCTATGT TGCAG 2455 Niniventer TTAAAGACTTCTTCCAATGGTTGCATCGAATACTGGAGAAATCCGTACTGTATGT AAGTG 2164 Berylmys TGCCAAATTTCTTTCAATGGTTACACAATATACTTGAAAAGTCAGTATTGTATGT TAGTG 2128 Gierle TTCCCAACTTCTTCCAATGGCTTCATCGAGTTCTTGAAAAATCAGTACTTTATGT AAGTG 2152 Feline TGCCTGGATTTTTCCAGTGGCTTCACAAGATTTTTGGAGAAATCTGTTCTATACGT TAGTG 2195 Dolphin TGCCTTCATTCTTCCAGTGGCTACACAAGAGGTTGGAGAAATCAGTCCTATATGT AAGCG 2125 Saiga_antelope, TACCATCCTTCTTTCAATGGTTACACAGGATATTGGAAAAATCCGTACTCTACGT CAGTG 2125 Goitered_gazelle, TACCATCCTTCTTTCAATGGTTACACAGGATATTGGAAAAATCCGTACTCTACGT 2125 CAGTG Domestic_sheep, TACCATCCTTCTTCAATGGTTACACAGGATTTTGGAAAAATCCGTACTCTACGT 2125 CAGTG Wild_goat, TACCATCCTTCTTTCAATGGTTACACAGGATATTGGAAAAATCCGTACTCTACGT CAGTG 2125 Bharal, TACCATCCTTCTATCATGGTTACACAGGATATTGGAAAAATCCGTACTCTACGT CAGTG 2125 TACCATCCTTCTTCAATGGTTACACAGGATATTGGAAAAATCCGTACTCTACGT Domestic_goat, 2125 CAGTG TACCCTCATTTTTTCAGTGGCTGCATAAGAGGCTTGAAACCTCTGTCCTCTATGT Measles AAGTG 2147 Rinderpest TACCATCCTTCTTCCAGTGGTTACATAGGCGCCTTGAAAGATCAGTATTGTATGT CAGTG 2125 Phocine_distemper_north_sea TTCCTTCATTTTTCCAATGGTTGCACAGGAGATTAGAACAATCGACACTGTATGT GAGTG 2147

TCCCCTCATTTTTCCAATGGTTACACAGAAGATTGGAACAGTCGATCTTATACGT

Feline

AAGTG 2125 TCCCCTCATTTTCCAATGGTTGCACAGAAGATTGGAACAGTCGATCTTATACGT Dog_canine_distemper 2125 AAGTG TCCCCTCATTTTTCCAATGGTTGCACAGAAGATTGGAACAGTCGATCTTATACGT Ferret, AAGTG 2125 Porcine TCCCTTCTTTCTTTGAATGGTTACATAAAAGGTTAGAGAAGTCTGTACTGTATGT CAGCG 2125 Phyllostomus TTCCTTGTTTCTTTGATTGGCTACATAAAAGGTTAGAAAAATCAGTGTTATACGT 2125 AAGTG * *** * ** * ** ** Hendra ATCCTAATTGCCCACCAGACATCGGGAAACATATAAACCTTGATGATACTCCTGA AGATG 2515 Nipah ACCCTAATTGCCCCCCTAATATTGACAAACATATGGAACTAGAAAAAACTCCTGA AGATG 2515 ATCCCTTCTGCCCACCAGGATTTGACTGTTTTACAAGGCTTGATGATGCTCCAAA Niniventer TGACC 2224 ${\tt ATCCATATTGTCCTCCTGACTTAGATGATCATTGCAGATTAGATGATGTTCCAAA}$ Bervlmvs TGATC 2188 Gierle ATCCTTATTGCCCCCCTGACCTGGATGCTCACTGTGATTTAGACAATGTAGCAAA TCATC 2212 Feline ATCCATCTAGTCCACCTGACTTTGATCAACATGTCGATATAGAATCAGTCCCAAA TGACC 2255 Dolphin ATCCTCACTGTCCACCAGATCTTGATACTCATATGGATTTAGATGCCGTCCCAAA 2185 CTCTC ACCCACATTGTCCTCCGATCTAGATAATCATATCCCTCTGGACAGTGTCCCCAA Saiga_antelope, TGCCC 2185 ACCCACATTGTCCTCCCGATCTAGATAATCATATCCCTCTGGACAGTGTCCCCAA Goitered_gazelle, TGCCC 2185 ACCCACATTGCCCTCCGACCTAGATAATCATATCCCTCTGGACAGTGTCCCTAA Domestic_sheep, TGCCC 2185 Wild_goat, ACCCACATTGCCCTCCGACCTAGATAATCATATCCCTCTGGACAGTGTCCCTAA TGCCC 2185 Bharal, ACCCACATTGCCCTCCGATCTAGATAATCATATCCCTCTGGACAGTGTCCCTAA TGCTC 2185 Domestic_goat, ACCCACATTGCCCTCCGACCTAGATAATCATATCCCTCTGGACAGTGTCCCTAA TGCCC 2185 Measles ACCCTCATTGCCCCCCCGACCTTGACGCCCATGTCCCGTTATGCAAAGTCCCCAA TGACC 2207 Rinderpest ACCCTCATTGTCCCCCCGATTTAGATAGCCACGTGAACTTGGATAATGTCCCGAA TGATC 2185 Phocine_distemper_north_sea ACCCTCACTGTCCTCCTGATCTTGATCGCCATATAAACCTTGATGCAACTCCAAA TTCTC 2207 Phocine_distemper_caspian_sea, ACCCCACTGCCCTCCAGATCTCGATCGTCATGTGGACTTGAATACAGCCCCTAA CTCTC 2185 Dog_canine_distemper ACCCCACTGCCCTCCAGATCTCGATCGTCATGTGGACTTGAATACAGCCCCTAA CTCTC 2185 Ferret, ACCCCACTGCCCTCCAGATCTCGATCGTCATGTGGACTTGAATACAGCCCCTAA 2185 CTCTC Porcine ATCCTCATTGCCCACCAGATCTCGACCACCATATCAACCTGGATGAGGTCCCAAA 2185 TCAAC Phyllostomus ATCCTCACTGTCCTCCTGATCTGGACCACCACATTGATCTCGACAATGTTCCGAA TAACC 2185 Hendra ACATATTTATCCATTCACCAAAAGGCGGGATTGAAGGTTATAGTCAGAAGACTTG GACGA 2575 ATATATTCATTCATTATCCTAAAGGCGGTATTGAAGGATATAGCCAAAAAACATG Nipah GACTA 2575 Niniventer ATATTTTCATTAAGTACCCAATGGGTGGAATTGAGGGATTCAACCAAAAATTGTG GACAA 2284 Berylmys ATATCTATATAAAATATCCAATGGGAGGAATAGAAGGTTTCTGTCAAAAGATGTG GACAA 2248 Gierle ATATCTACATCAAGTATCCAATGGGTGGTATAGAAGGCTTCTGTCAAAAATTGTG GACTA 2272 ATATCTTTATCAAGTACCCGATGGGTGGAATAGAGGGGTTCTGTCAAAAATTATG

GACCA 2315 Dolphin GACAA 2245 Saiga_antelope, 2245 GACAA Goitered_gazelle, GACAA 2245 Domestic_sheep, GACAA 2245 Wild_goat, 2245 GACAA Bharal, GACAA 2245 Domestic_goat, GACAA 2245 Measles 2267 GACCA Rinderpest GACAA 2245 Phocine_distemper_north_sea GACAA 2267 Phocine_distemper_caspian_sea, GACTA 2245 Dog_canine_distemper GACTA 2245 Ferret, 2245 GACTA Porcine 2245 GACCA Phyllostomus

*** *

GACTA

2245

Hendra 2635 AGCTA Nipah TGCAA 2635 Niniventer ATCAT 2344 Berylmys 2308 ATCCT Gierle ATCAC 2332 Feline ATCAT 2375 Dolphin 2305 CTCAT Saiga_antelope, CTCAC 2305 Goitered_gazelle, CTCAC 2305 Domestic_sheep, CTCAC 2305 Wild_goat, CTCAC 2305 Bharal, CTCAC 2305 Domestic_goat, CTCAC 2305 Measles 2327 TTCGT Rinderpest CTCTC 2305 Phocine_distemper_north_sea ATCAC 2327 Phocine_distemper_caspian_sea,

ATCAC 2305

AAATATTTATAAAGTACCCAATGGGAGGGATCGAAGGATACTGTCAGAAGCTCTG AAATATTCATCAAGTACCCAATGGGCGGAATAGAAGGTTATTGCCAAAAACTATG AAATATTCATCAAGTACCCAATGGGCGGAATAGAAGGTTATTGCCAAAAACTATG AAATATTCATTAAGTACCCCATGGGCGGAATAGAAGGTTATTGCCAAAAACTATG AAATATTCATTAAGTACCCAATGGGCGGAATAGAAGGTTATTGCCAAAAACTATG AAATATTCATTAAGTACCCAATGGGCGGAATAGAAGGTTATTGCCAAAAACTATG AAATATTCATTAAGTACCCAATGGGCGGAATAGAAGGTTATTGCCAAAAACTATG AAATCTTCATCAAGTACCCTATGGGAGGTATAGAAGGGTATTGTCAGAAGCTGTG AGATTTTCATCAAATACCCTATGGGGGGGATAGAAGGCTATTGTCAAAAACTGTG AGATATTCATAAAATATCCAATGGGAGGAGTCGAAGGGTATTGCCAAAAATTATG AAATATTCATCAAATACCCAATGGGGGGGGGGGGGGTTATTGTCAGAAGTTGTG AAATATTCATCAAATACCCAATGGGAGGGGTGGAGGGGTATTGTCAGAAGTTATG AAATATTCATCAAATACCCAATGGGAGGGGTGGAGGGGTATTGTCAGAAGTTATG AAATCTTTATCAAATACCCGATGGGTGGAATTGAGGGGTATTGCCAAAAGTTATG AAATCTTTATCAAATACCCTATGGGTGGTATTGAAGGGTATTGCCAAAAACTGTG

TCGCAACAATTCCCTTTCTGTTTCTCAGTGCCTACGAAACAAATACAAGGATTGC TAGCAACTATCCCCTTTTTATTCTTGAGTGCCTATGAGACAAACACGAGGATTGC TCAGTACTATACCAGTATTGTATCTGTCAGCATATGAGACCGGTGTCCGAATTTC TAAGTACAATACCTTTTTTTTTTTTTTCTGCCCGGGTATAATGTAGGGGGTAAGGATTTC TAAGCACTATCCCTTATCTATACTTAGCTGGTTACGAAACAGGGGTCAGGATCTC TTAGTACAATTCCGTTCCTATATTTAGCAGCTTTTGATACAGGGGTTAGAATCTC TAAGTACAATACCCTACCTGTACCTAGCGGCTCATGAGAGTGGAGTTAGGATTGC TCAGCACTATACCATACTTGTATCTGGCAGCCTATGAGAGCGGAGTAAGAATCGC TCAGCACTATACCATACTTGTATCTGGCAGCCTATGAGAGCGGAGTAAGAATCGC TCAGTACTATACCATACTTGTATCTGGCAGCCTATGAGAGCGGAGTAAGAATCGC TCAGTACTATACCATACTTGTATCTGGCAGCCTATGAGAGCGGAGTAAGAATCGC TCAGTACTATACCATACTTGTATCTGGCAGCCTATGAGAGCGGAGTAAGAATCGC TCAGTACTATACCATACTTGTATCTGGCAGCCTATGAGAGCGGAGTAAGAATCGC TCAGCACCATTCCCTACTTATACCTGGCTGCTTATGAGAGCGGGGTAAGGATTGC TTAGCACTATCCCCTATCTTTACTTGGCTGCACATGAGAGCGGGGTCAGGATTGC

TTAGCACTATACCATACCTGTACTTAGCGGCACATGAAAGCGGTGTTAGAATTGC

TTAGCACCATACCTTATTTGTACTTGGCGGCACATGAGAGCGGTGTCAGAATTGC

** * ** **

* ** ** *

AAGAC

2495

```
Dog_canine_distemper
                                    TTAGCACCATACCTTATCTGTACTTGGCGGCACATGAGAGTGGTGTCAGAATTGC
ATCAC
        2305
Ferret,
                                    TTAGCACCATACCTTATCTGTACTTGGCGGCACATGAGAGTGGTGTCAGAATTGC
        2305
ATCAC
                                    TAAGCACTATCCCCTATCTTTACTTGTCAGCTCATGAATGCGGAGTGAGAATAGC
Porcine
TTCTT
        2305
Phyllostomus
                                    TTAGCACCATACCTTACTTATACCTTGCAGCTCATGAGTGCGGGGTCAGGATTGC
ATCTT
       2305
                                         ** ** **
                                                       * *
                                                                                     * **
Hendra
                                    TAGTTCAGGGAGACAATGAGTCAATTGCCATAACTCAGAAGGTCCACCCTAATTT
ACCTT
        2695
                                    TTGTCCAAGGAGACAATGAATCAATTGCTATCACTCAAAAAGTTCATCCTAATCT
Nipah
TCCCT
        2695
Niniventer
                                    TGGTTCAAGGAGATAATCAGGCCATTGCAGTGACAAAGAGGGTACCCTCATCATG
GCCGT
       2404
                                    TAGTACAAGGGGATAATCAAGCTATAGCTGTCACTAAGAGGGTACCTTCTAGTTG
Berylmys
GCCCT
        2368
Gierle
                                    TGGTACAGGGACAATCAAGCCATAGGGGTCACTAAGCGGGTTCCATCATCATG
GCCAT
        2392
Feline
                                    TGGTTCAAGGCGATAACCAGGCAATTGCAGTAACCAAAAGAGTTCCGTCATCTTG
GAGTT
        2435
Dolphin
                                    TGGTTCAAGGAGACCAGACCATAGCCGTCACAAAAAGAGTCCCAAGCACCTG
GCCCT
        2365
                                    TGGTGCAGGGTGACAATCAGACAATCGCAGTGACAAAAAGAGTTCCAAGTTCTTG
Saiga_antelope,
GCCTT
       2365
                                    TGGTGCAGGGTGACAATCAGACAATCGCAGTGACAAAAAGAGTTCCAAGTTCTTG
Goitered_gazelle,
GCCTT
       2365
                                    TAGTGCAGGGTGACAATCAGACAATCGCAGTGACAAAAAGAGTTCCAAGTTCTTG
Domestic_sheep,
        2365
GCCTT
Wild_goat,
                                    TAGTGCAGGGTGACAATCAGACAATCGCGGTGACAAAAAGAGTTCCAAGTTCTTG
GCCCT
       2365
Bharal,
                                    TGGTGCAGGGTGACAATCAGACAATCGCAGTGACAAAAAGAGTTCCAAGCTCTTG
GCCTT
        2365
                                    TAGTGCAGGGTGACAATCAGACAATCGCAGTGACAAAAAGAGTTCCAAGTTCTTG
Domestic_goat,
GCCTT
        2365
Measles
                                    TAGTGCAAGGGGACAATCAGACCATAGCCGTAACAAAAAGGGTACCCAGCACATG
GCCTT
       2387
Rinderpest
                                    TTGTCCAGGGAGACAATCAGACAATTGCAGTCACCAAGCGGGTCCCAAGTTCATG
GCCTT
       2365
Phocine_distemper_north_sea
                                    TGGTTCAAGGAGACAACCAGACTATAGCAGTTACAAAAAGAGTCCCAAGCACATG
        2387
GCCTT
Phocine_distemper_caspian_sea,
                                    TTGTCCAAGGTGATAACCAAACTATTGCAGTCACTAAAAGAGTACCAAGCACCTG
GTCCT
        2365
Dog_canine_distemper
                                    TTGTCCAAGGTGATAACCAAACTATTGCTGTCACTAAAAGAGTACCAAGCACCTG
GTCCT
        2365
                                    TTGTCCAAGGTGATAACCAAACTATTGCTGTCACTAAAAGAGTACCAAGCACCTG
Ferret,
GTCCT
        2365
Porcine
                                    TAGTTCAGGGAGACAACCAGACTATAGCTGTTACCAAGCGAGTTCCGAGTTCATG
GCCAT
       2365
Phyllostomus
                                    TGGTCCAAGGGGATAACCAGACAATAGCAGTCACCAAACGGGTACCAAGTACATG
GCCCT
       2365
                                    ACAAAGTCAAGAAAGAAATTTGTGCAAGGCAAGCTCAATTATATTTTGACAGGCT
Hendra
CAGAA
        2755
Nipah
                                    ACAAGGTAAAGAAAGAGTCTGTGCAAAGCAAGCTCAGCTTTATTTTGAAAGGTT
        2755
AAGGA
                                    ATTCTTATAAGAAGGAATCTGTCATGCAGATCACCACAGACTACTTCAAGTGCTT
Niniventer
GAGAA
        2464
Berylmys
                                    ATAGGATGAAAAAAGAGGAAGCCATGGTAGCTACTAAACTATATTTCAAGGAATT
AAGAA
        2428
Gierle
                                    ATAGAGCCAAGAAAGAGGAAGTGATGAAAGCCACTCAGATTTACTTCAAAGAGTT
AAGAC
        2452
Feline
                                    ACTCAAAGAAAAGGAAGAATCAACTAAAATAACAACACAATATTTTCTTAATTT
```

2425

Dolphin

AAGGC

ATGATCTCAAGAAGAGGGGAGGCTACAAAAATAACTATTGAGTACTTCTTAATCCT

```
ATTCACTAAAAAAGAGGGGGGCCTCCAAGGCCGCTCAAAATTACTTCGTAGTCTT
Saiga_antelope,
AAGGC
      2425
Goitered_gazelle,
                                   ATTCACTAAAAAGAGGGAGGCCTCCAAGGCCGCTCAAAATTACTTCGTAGTCTT
AAGGC
       2425
Domestic_sheep,
                                   ATTCACTAAAAAGGGGAGGCATCCAAAGCCGCTCAAAATTACTTCGTAGTCTT
AAGGC
       2425
Wild_goat,
                                   ATTCACTAAAAAAGAGGGAGGCATCCAAAGCTGCTCAAAATTACTTCGTAGTCTT
AAGGC
       2425
Bharal,
                                   ATTCACTAAAAAAGAAGGAGGCATCCAGAGCCGCTCAAAACTACTTCGTGGTCTT
AAGGC
       2425
Domestic_goat,
                                   ATTCACTAAAAAGAGGGAGGCATCCAAAGCCGCTCAAAATTACTTCGTAGTCTT
AAGGC
       2425
                                   ACAACCTTAAGAAACGGGAAGCTGCTAGAGTAACTAGAGATTACTTTGTAATTCT
Measles
      2447
TAGGC
                                   ACCACCTTAAGAAAAGAGAAGCTGCACGCGTGACAAGAGAATATTTCTGTCTCCT
Rinderpest
GAGGC
       2425
Phocine_distemper_north_sea
                                   ATGAACTGAAAAAGCTGAAGCTAGCCGAGTGACAACAGAGTATTTTATAGCTTT
AAGGC
       2447
Phocine_distemper_caspian_sea,
                                   ATGCCTTGAAGAATCTGAAGCCAGTCGAGTGACCACAGAATACTTTATAGCCTT
GAGAC
       2425
Dog_canine_distemper
                                   ATGCCTTGAAGAATCTGAAGCCAGTCGAGTGACCACAGAATACTTTATAGCCTT
GAGAC
       2425
Ferret,
                                   ATGCCTTGAAGAAATCTGAAGCCAGTCGAGTGACCACAGAATACTTTATAGCCTT
       2425
GAGAC
                                   Porcine
      2425
ACGGG
                                   ACCCTCTTAAAAAGGCCGAGGCAGCTAGAGTGACAGTCAATTACTTTATGATCCT
Phyllostomus
AAGAG
      2425
                                           ** **
Hendra
                                   TGAATCTTAGGGCCTTAGGACTCAACTTAAAAGCAACAGAGACCATTATAAGTAC
       2815
ACACT
                                   TGAACTTAAGAGCCCTCGGCCACAATCTTAAAGCTACAGAAACTATCATCAGTAC
Nipah
ACATC
       2815
Niniventer
                                   CAAATCTTGGATGGATAGGTCACAATCTTAAAGCGAATGAGACTTTGCTATCGTC
ACACT
       2524
Berylmys
                                   GAATATTAGGATGGATTGGTCACAACTTGAAGGAACATGAAACTTTGTTGTCATC
CCACT
       2488
Gierle
                                   GGATCCTTGGTTGGGTAGGGCACAATCTCAAGGAACATGAGACCCTGCTTTCTTC
TCATT
       2512
Feline
                                   AACGCTTACACGATATAGGTCATGAATTGAAAGCAAATGAGACTATTATATCCTC
TCATT
       2555
Dolphin
                                   AGCGATTGCACGATATAGGGCATCATTTGAAAGCAAATGAAACAATTATATCCTC
       2485
ACATT
                                   AAAGATTGCACGATGTAGGTCATCACTTAAAGGCTAATGAGACCATAGTATCTTC
Saiga_antelope,
TCACT
      2485
Goitered_gazelle,
                                   AAAGATTGCACGATGTAGGTCATCACTTAAAGGCTAATGAGACCATAGTATCTTC
TCACT
       2485
Domestic_sheep,
                                   AAAGATTGCACGATGTAGGTCATCACTTAAAGGCTAATGAAACCATAGTATCTTC
TCACT
       2485
Wild_goat,
                                   AAAGATTGCACGATGTAGGTCATCACTTAAAGGCTAATGAAACCATAGTATCTTC
TCACT
       2485
Bharal,
                                   AAAGATTGCACGATGTAGGTCATCACTTAAAGGCTAATGAAACCATAGTATCTTC
TCACT
       2485
Domestic_goat,
                                   AAAGATTGCACGATGTAGGTCATCACTTAAAGGCTAATGAAACCATAGTATCTTC
TCACT
       2485
                                   AAAGGCTACATGACATTGGCCATCACCTCAAGGCAAATGAGACAATTGTTTCATC
Measles
       2507
ACATT
                                   AAAGACTCCATGATATTGGCCATCACCTTAAGGCAAACGAAACTATCGTGTCATC
Rinderpest
ACACT
       2485
Phocine_distemper_north_sea
                                   AGAGATTGCATGATGTTGGTCACCATTTGAAAGCAAACGAAACAATAGTGTCTTC
       2507
ACACT
Phocine_distemper_caspian_sea,
                                   AGAGGTTACATGATGTCGGACATCATTTGAAAGCAAATGAAACAATAATCTCTTC
CCACT
       2485
                                   AGAGGTTACATGATGTCGGACATCATTTGAAAGCAAATGAAACAATAATCTCTTC
Dog_canine_distemper
```

TTGCA 2935
Nipah CAATGTCAAGATGTTGCTTTTGGTCAGAGACTCTGGTGGATGAAACTAGATCAGC
TTGTA 2935
Niniventer GCATTGCTAGGTGTGTTCTGGTCGAAACCATAGTTGATGAGACTAGATCAGC
ATGCA 2644
Berylmys GCATATCGAGATGTGTCTTTTGGTCAGAGACTATTGTTGATGAGACACGCTCTGC
CTGCA 2608
Gierle GTATCTCACGATGTGTCTTCTGGTCAGAAACTATCGTTGATGAGACTCGCTCTGC
TTGCA 2632
Feline GTATTGCAAGATGTGTCTTTTGGTCTGAAACGATTGTTGATGAGACTAGGTCAGC
TTGCA 2675
Dolphin GTGTGGCTCGGTGTGTTTTCTGGTCGGAAACAATTGTGGATGAAACTAGAGCAGC

TTGCA 2605 Saiga_antelope, GTGCA 2605 Goitered_gazelle, GTGCA 2605 Domestic_sheep, TTGCA 2605 Wild_goat, TTGCA 2605 Bharal, 2605 TTGCA Domestic_goat, TTGCA 2605 Measles ATGCA 2627 Rinderpest TTGCA 2605 Phocine_distemper_north_sea ATGTA 2627 Phocine_distemper_caspian_sea, GTGCA 2605 Dog canine distemper GTGCA 2605 Ferret, 2605 GTGCA Porcine TTGTA 2605 Phyllostomus CTGTA 2605 ** *

Hendra GGGTT 2995 Nipah CGGCT 2995 Niniventer TAGTT 2704 Berylmys AGCAT 2668 Gierle TGCTT 2692 Feline GGCGT 2735 Dolphin GGCTT 2665 Saiga_antelope, TGCAT 2665 Goitered_gazelle, TGCAT 2665 Domestic_sheep, 2665 TGCAT Wild_goat, TGCAT 2665 Bharal, TGCAT 2665 Domestic_goat, TGCAT 2665 Measles TGCAT 2687 Rinderpest 2665 Phocine_distemper_north_sea

AGCCT

AGCCT

AGCCT

2687

2665 Dog_canine_distemper

2665

Phocine_distemper_caspian_sea,

GCATCGCCAGATGTCTTCTGGTCCGAGACTATAGTGGATGAAACCAGAGCGGC GCATCGCCAGATGTGTCTTCTGGTCCGAGACTATAGTGGATGAAACCAGAGCGGC GCATCGCCAGATGTCTTCTGGTCCGAGACTATAGTGGATGAAACCAGAGCGGC GCATCGCCAGATGTCTTCTGGTCCGAGACTATAGTGGATGAAACCAGAGCGGC GCATCGCCAGATGTGTCTTCTGGTCCGAGACTATAGTGGATGAAACCAGAGCGGC GCATCGCCAGATGTGTCTTCTGGTCCGAGACTATAGTGGATGAAACCAGAGCGGC GCATCGCAAGATGTGTATTCTGGTCAGAGACTATAGTTGATGAAACAAGGGCAGC GCATTGCACGATGTCTCTCTGGTCAGAAACTATAGTTGATGAGACAAGAGCAGC GTGTAGCTAGATGTGTTTTTGGTCAGAAACAATAGTAGATGAGACACGAGCTGC GTATAGCTAGGTGTATTTTGGTCAGAAACAATAGTGGATGAGACCCGAGCCGC GTATAGCTAGGTGTATTTTGGTCAGAAACAATAGTGGATGAGACCCGAGCCGC GTATAGCTAGGTGTATTTTGGTCAGAAACAATAGTGGATGAGACCCGAGCCGC GCGTAGCCCGATGTGTTTTCTGGTCAGAAACTATTGTAGATGAGACTAGAGCAGC GTATCGCTCGCTGCGTATTTTGGTCAGAAACAATTGTAGATGAGACTAGAGCAGC

GCAATATTAGTACTACCATAGCTAAGGCGATTGAGAATGGATTATCAAGAAATGT GTAACATCAGCACTACAATAGCTAAAGCTATAGAAAATGGGTTGTCAAGAAATGT GCAATATTTCAACAACACTGGCAAAATCGATTGAAAAGGGCTTTTGTAGGTATAC GTAACATTGCAACTACAATAGCCAAAGCAATTGAGCGAGGGTGTGATAGGTATAT GCAACATAGCAACTACTATTGCCAAGGCTATAGAAAGAGGTTACGATCGCTATAT GTAATATCTACGACACTCGCAAAGGCAATTGAAAGGGGTTATGATAAATTTGT GTAATATCTCGACAACTCTTGCAAAAAGCATAGAAAGGGGATTTGACCGGTATTT GTAATATTGCAACAACTGTCGCTAAGAGTATAGAGAGGGGTTATGATAGGTACCT GTAATATTGCAACAACTGTCGCTAAGAGTATAGAGAGGGGTTATGATAGGTACCT GCAATATTGCAACAACTGTCGCCAAGAGTATAGAGAGGGGTTATGATAGGTACCT GTAATATTGCAACAACTGTCGCTAAGAGTATAGAGAGGGGTTATGATAGGTACCT GCAATATTGCAACAACTGTCGCTAAGAGTATAGAGAGGGGTTATGATAGGTACCT GTAATATTGCTACAACAATGGCTAAAAGCATCGAGAGAGGTTATGACCGTTATCT GCAACATCGCCACGACTATAGCCAAGAGCATAGAGAGAGGGTTTGACAGGTACCT GCAATATCTCTACAACTCTAGCAAAGGCAATTGAGAAGGGTTTTGATAGGTACCT GCAACATTTCAACAACATTAGCGAAAGCCATTGAGAAAGGGTTTGACCGATATTT GCAACATTTCAACAACATTAGCGAAAGCCATTGAGAAAGGGTTTGACCGATATTT

GCAACATTTCAACAACATTAGCGAAAGCCATTGAGAAAGGGTTTGACCGATATTT

Ferret, 2665 AGCCT Porcine AGCCT 2665 Phyllostomus AGCCT 2665 Hendra CATCA 3055 Nipah TATTA 3055 Niniventer TATCA 2764 Berylmys AATTA 2728 Gierle AATCA 2752 Feline GATTA 2795 Dolphin AATAA 2725 Saiga_antelope, TATTA 2725 Goitered_gazelle, TATTA 2725 Domestic_sheep, TATTA 2725 Wild_goat, TATTA 2725 Bharal, TATTA 2725 Domestic_goat, TATTA 2725 Measles AATCA 2747 Rinderpest AATAA 2725 Phocine_distemper_north_sea TATTA 2747 Phocine_distemper_caspian_sea, 2725 TATCA Dog_canine_distemper TATCA 2725 Ferret, TATCA 2725 Porcine 2725 CATCA Phyllostomus 2725 AATCA Hendra GGTAA 3115 Nipah TATAA 3115 Niniventer AATAT Berylmys GTTAC 2788 Gierle TACGA 2812 Feline

TAAGA

Dolphin

GATTA 2785

2855

GCAATATATCCACCACTTTGGCAAAGTCAATTGAAAAGGGTTTCGACCGTTACCT * ** ** ACTGCATCAACGTCTTGAAGGTCATACAGCAACTGCTTATTTCTACTGAGTTTAG ATTGCATCAATATTTTGAAAGTAATTCAGCAGCTTCTCATATCAACTGAGTTTAG ACTGCTACAATATCTATAAGACTATTCTTCAATTGCTTATTGCACTCGGTTTTAC ATTGCTACTGCATTTACAAGACCTTACTACAGGTAATTGTTGCCTTAAGATTCAC ATTGCTACAATCTCTATAAAGTGATACTACAGGTGCTAGTTGCTTTAAGGTTCAC ACGCTATCAATATTTATAAAACAATACATCAGGTGTTGATTGCATTGTCCTTTAC ACTCATTGAATGTACTCAAGATTATTCAACAGATCCTTATCTCCCTAGGGTTTAC ATTCTTTGAATATCCTCAAGATTTTCCAACAGATCCTTATATCCCTTAACTTCAC ATTCTTTGAATATCCTCAAGATTTTCCAACAGATCCTTATATCCCTTAACTTCAC ATTCTTTGAATATCCTCAAGATTTTCCAACAGATCCTTATATCCCTTAACTTCAC ATTCTTTGAATATCCTCAAGATTCTCCAACAGATCCTTATATCCCTTAATTTCAC ATTCTTTGAATATCCTCAAGATTTTCCAACAGATCCTTATATCCCTTAACTTCAC ATTCTTTGAATATCCTCAAGATTTTCCAACAGATCCTTATATCCCTTAACTTCAC ATTCCCTGAACGTCCTAAAAGTGATACAGCAAATTTTGATCTCTCTTGGCTTCAC ATTCTCTGAACATCCTGAAAGTTATACAACAGATACTAATATCACTGGGTTTCAC ACGCACTTAATATCTTGAAGATCATTCAACAAGTTCTCATCTCATTAGGATTCAC ACGCACTGAACATTTTAAAAATCATTCAACAAGTATTAATTTCATTAGGATTCAC ACACGCTGAACATTTTAAAAATCATCCAACAAGTATTAATTTCATTAGGATTCAC ACACGCTGAACATTTTAAAAATCATCCAACAAGTATTAATTTCATTAGGATTCAC ATGCCCTTAACCTTATCAAAACCATACAGCAGCTGTTGATTTCACTGGGCTTTAC ATGCACTCAATCTAATTAAGACCATCCAGCAGCTTTTGATCTCACTTGGGTTCAC ACGAGACATTGACTGCTGATGTAACATCTCCAATATCCAATAATCTCGATTGGCT ACGAGACATTGACACTGGATGTGACATCTCCCATTTCAAATAATTTAGATTGGCT ATCCAACTATGACAGCGGACATCACCAGACCTATACTTGACAATCCACAGTTACT

ATCCCACTCTCACTGACGATGTAATTCTCCCTCTCACACGCAATTTATCCCTTCT

ATCCTACTATGACACCAGACATTACAGAACCTTTCTACAAGAGTTTAGATCTACT

ACACTTCTATGACTCAAGACATAGCAATCCCATTACTGCAGAATCAAGATTTGTT

```
alignments.txt
                     Wed Dec 18 07:53:28 2024
Saiga_antelope,
GATAA
      2785
Goitered_gazelle,
       2785
GATAA
Domestic_sheep,
GATAA
       2785
Wild_goat,
GATAA
       2785
Bharal,
       2785
GATAA
Domestic_goat,
GATAA
        2785
Measles
AATAA
       2807
Rinderpest
GATAA
       2785
Phocine_distemper_north_sea
GACTA
        2807
Phocine_distemper_caspian_sea,
GACCA
        2785
Dog_canine_distemper
GACCA
       2785
Ferret,
GACCA
       2785
Porcine
       2785
AACAA
Phyllostomus
TACTA 2785
Hendra
AATAT
        3175
Nipah
AATTT
        3175
Niniventer
ATTAT
       2884
Berylmys
ATTGT
       2848
Gierle
GCTAT
        2872
Feline
GTTAT
       2915
Dolphin
ATTAT
       2845
Saiga_antelope,
GTTAT
       2845
Goitered_gazelle,
GTTAT
       2845
Domestic_sheep,
GTTAT
       2845
Wild_goat,
GTTAT
       2845
Bharal,
        2845
GTTAT
```

Domestic_goat,

2845

2867

2845

2867

2845

Dog_canine_distemper 2845

Phocine_distemper_north_sea

Phocine_distemper_caspian_sea,

GTTAT

GCTGT

GTTAT

ACTCT

GCTCT

GCTCT

Ferret,

Measles

Rinderpest

ACACAACAATGACTCAGGATGTCGTGGCACCGATCATCGAGAACGGTGATTTGCT ACACAACAATGACTCAGGATGTCGTGGCACCGATCATCGAGAACGGTGATTTGCT ACACAACAATGACTCAGGATGTCGTGGCACCGATCATCGAAAACGGGGATTTGCT ACACAACAATGACTCAGGATGTCGTGGCACCGATCATCGAAAACGGGGATTTGCT ACACAACAATGACTCAGGATGTTGTGGCACCGATCATCGAGAACGGTGATTTGCT ACACAACAATGACTCAGGATGTCGTGGCACCGATCATCGAGAACGGTGATTTGCT ATTCTACAATGACACAAGATGTAGTGGTCCCTCTTCTATCAAACCATGACCTCCT ATTCGGCTATGACACAGGATGTAATAGAACCACTGCTGCAAAACCACTGTCTCTT ATTCAGCTATGACACGGGATGTGATAGAACCCCTCGTACAAGATCACTGTCTCTT ATTCAGCGATGACACGGGATGTGATAGAACCCCTCTTACAAGATCACTGTCTCTT ATTCAGCGATGACACGGGATGTGATAGAACCCCTCTTACAAGATCACTGTCTCTT ATGGATCCATGACAGACGATGTGGTTGAACCCCTTTTAAAAGATCATAGAATTAT ATGGATCGATGACGGATGACATAGTGGGACCTCTTCTGGCAAATAATAGGATCAT CTGCATCCCGAATTCCCGCACCAATTGGAGGTTTCAATTACTTGAATTTATCAAG CAGCTGCATTAATCCCGGCACCTATTGGAGGATTCAATTACCTTAATTTGTCTAG GTCTATCTGTTCTTCCATCTCCTATAGGAGGGTTCAACTATTTAAATATGAGCAG AGATATGCCTCATCCCTGCACCAATTGGAGGATTTAACTACTTAAACATGAGTAG CAATTTGCTTAATTCCTGCCCCAATAGGAGGGTTTAACTATCTTAATATGAGCAG A TCTA GTTCTGA TTCCTGCA CCA TTA GGGGGCCA TGA A CTA TA TGA A CA TGA GCA G AGATGGCACTACTGCTCCTATAGGTGGCCTCAATTATCTTAATATGAGCAG GGATGGCACTCTTGCCAGCACCCATCGGGGGTCTCAATTATCTTAACATGAGCAG GGATGGCACTCTTGCCAGCACCCATCGGGGGTCTCAATTATCTTAACATGAGCAG GGATGGCACTCTTGCCAGCACCCATCGGGGGTCTCAATTATCTTAACATGAGCAG GGATGGCACTCTTGCCAGCACCCATCGGGGGTCTCAATTATCTTAACATGAGCAG GGATGGCACTCTTGCCAGCACCCATCGGAGGTCTAAATTATCTTAACATGAGCAG GGATGGCACTCTTGCCAGCACCCATCGGGGGTCTCAATTATCTTAACATGAGCAG GGATGGCACTGTTGCCCGCTCCTATTGGGGGGGATGAATTATCTGAATATGAGCAG GGATGGCCCTTTTACCTGCTCCAATCGGGGGTATGAACTACTTAAACATGAGTAG

AAATGGCAATACTTCCTGCTCCTATTGGTGGTCTAAATTACCTGAATATGAGTAG

AGATGGCAATTCTCCCCGCACCCATTGGCGGTCTTAATTACCTCAATATGAGTAG

AGATGGCAATTCTCCCCGCACCCATTGGCGGTTTTAATTACCTCAATATGAGTAG

AGATGGCAATTCTCCCCGCACCCATTGGCGGTTTTAATTACCTCAATATGAGTAG

36 GCTCT 2845 AGATGGCACTCCTCCCTGCCCGATAGGAGGATTCAATTATTTGAACATGAGCCG Porcine CCTGT 2845 Phyllostomus AGATGGCACTGCTACCTGCTCCTATAGGAGGTTTTAATTACTTAAACATGAGCCG TCTAT 2845 Hendra GATAG 3235 Nipah GATTG 3235 Niniventer AATCC 2944 Berylmys GATCA 2908 Gierle GATTA 2932 Feline GATTG 2975 Dolphin GATAA 2905 Saiga_antelope, GATAG 2905 Goitered_gazelle, GATAG 2905 Domestic_sheep, GATAG 2905 Wild_goat, GATAG 2905 Bharal, GATAG 2905 Domestic_goat, GATAG 2905 Measles GATTC 2927 Rinderpest GATTG 2905 Phocine_distemper_north_sea 2927 GATTA Phocine_distemper_caspian_sea, GATCC 2905 Dog_canine_distemper GATCC 2905 Ferret, 2905 GATCC Porcine GATTA 2905 Phyllostomus GATCA 2905 AACATGACTTGATGACAGATAAAGTTCTCCAAAAAGTGATGAATCAAGAACCAGG Hendra CGATG 3295 Nipah TGATG 3295 Niniventer TGAAT 3004 Berylmys GGATT 2968 Gierle GGACT 2992 Feline TTCCT 3035 Dolphin 2965 GGATT

Saiga_antelope,

TTGTAAGAAATATAGGAGACCCTGTGACTGCATCACTAGCCGATCTAAAGAGAAT TTGTTAGAAATATAGGTGATCCGGTTACAGCATCTTTGGCTGATCTTAAGAGAAT TTGTCAGGAATATTGGTGATCCCATTACTGCATCGTTTGCAGACCTCAAGAGATT TCGTAAGAATATAGGTGATGTTGTTACCGCATCTTTTGCAGATATCAAAAGAAT ATGTAAGGAATATTGGGGATGTAGTTACAGCATCACTTGCAGATGTCAAAAGAAT TTGTTAGGAATATAGGAGATCCCATTACTGCTTCATTTGCTGATATAAAGCGCAT TCGTAAGGAATATAGGTGATCCAGTTACGTCCTCTTTAGCTGACCTCAAAAGAAT TTGTGAGAAATATCGGTGACCCGGTCACCTCCTCTATAGCCGACCTGAAGAGGAT TTGTGAGAAATATCGGTGACCCGGTCACCTCCTCTATAGCCGACCTGAAGAGGAT TTGTGAGAAATATCGGTGACCCGGTCACCTCCTCTATAGCCGACCTGAAGAGGAT TTGTGAGAAATATCGGTGACCCGGTCACCTCTCTATAGCCGACCTGAAGAGGAT TTGTGAGAAATATCGGTGACCCGGTCACCTCCTCTATAGCCGACCTGAAGAGGAT TTGTGAGAAATATCGGTGACCCGGTCACCTCCTCTATAGCCGACCTGAAGAGGAT TTGTCAGAAACATCGGTGATCCAGTAACATCATCAATTGCTGATCTCAAGAGAAT TTGTCAGGAACATCGGGGATCCAGTGACATCGTCTATAGCTGACCTCAAGAGGAT TTGTAAGGAATATAGGGGACCCTGTTACGTCTTCCATTGCAGATCTCAAGCGAAT TTGTCAGGAATATCGGGGATCCCGTGACATCTTCTATTGCTGACCTCAAACGAAT TTGTCAGGAATATCGGGGATCCCGTGACATCTTCTATTGCTGACCTCAAACGAAT TTGTCAGGAATATCGGGGATCCCGTGACATCTTCTATTGCTGACCTCAAACGAAT TCGTTAGAAATATAGGCGATCCGGTCACATCATCATTGGCTGATTTAAAAAGAAT TTGTTCGGAACATCGGCGACCCAGTCACGTCGTCACTGGCTGATCTTAAACGGAT

ATCACAGTATTATGACTGAAAGCGTATTACAAAAAGTTATGAATCAAGAACCTGG AGTCTGGATTACTCCACTCATCTATTTTACAGAGAGTTATGAATCAACAACCTGG TGGCAAATTTATTACCATCTAACATATTAGATAAAATCATGACTCAAGATGCTGG TAGTTGGTCTCCCAAGCACTATTCTAGGGAAGATTATGACCCAAGATCGAGG AATGTGGGTTGTTAGGATGTAGTATTCTGTCACAAATAATGTACCAAAAATGTGG TTGCAGGGATTATGCCTGAGGAGTCGATCCACCAAGTTATGACACAACAACCAGG ATGCCGGGCTAATGCCAGAAGAAACATTGCATCAAGTGATGACCCAGACCCCGGG

AGAAT 2965 Goitered_gazelle, AGAAT 2965 Domestic_sheep, 2965 AGAAT Wild_goat, AGAAT 2965 Bharal, 2965 AGAAT Domestic goat, AGAAT 2965 Measles GGACT 2987 Rinderpest TGACT 2965 Phocine_distemper_north_sea 2987 TGATT Phocine_distemper_caspian_sea, TGACT 2965 Dog_canine_distemper TGACT 2965 Ferret, TGACT 2965 Porcine TGATT 2965 Phyllostomus TGACT 2965

Hendra GAGTA 3355 Nipah AAGCA 3355 Niniventer AAGTA 3064 Berylmys AAGTA 3028 Gierle 3052 AAGCA Feline AAGTA 3095 Dolphin GAGTA 3025 Saiga_antelope, GAGTA 3025 Goitered_gazelle, GAGTA 3025 Domestic_sheep, GAGTA 3025 Wild_goat, 3025 GAGTA Bharal, GAGTA 3025 Domestic_goat, GAGTA 3025 Measles GAGCA 3047 Rinderpest AAGCA 3025 Phocine_distemper_north_sea AAGCA Phocine_distemper_caspian_sea, GAGCA 3025

Dog_canine_distemper

3025

3025

GAGCA

Ferret,

GAGCA

CAAGCTTCCTAGATTGGGCTAGTGATCCGTATTCAGGAAATCTACCGGATTCACA CGAGTTTCTTGGACTGGCCAGTGATCCATACTCGGGCAACTTGCCTGACTCACA CAACTTACCTTGATTGGGCAAGTGATCCATATTCTGCTAATCTTCCAGCAGTTCA CTAAATTTCTAGACTGGGCAAGTGATCCTTACTCTGCAAATTTGCCAGCAGTTCA CAAAATATCTGGATTGGGCAAGTGATCCCTACTCAGCTAATTTACCAGCTGTTCA CCAATACTTAGACTGGGCTAGTGATCCTTATTCAATAAACCTTTCTTATAGCCACCTCTTTCCTAGATTGGGCGAGTGATCCCTACTCAGCTAATCTACCATGTGTCCA CATCTTACCTAGATTGGGCAAGTGACCCTTATTCTGCCAACCTACCCTGCGTACA CATCTTACCTAGATTGGGCAAGTGACCCTTATTCTGCCAACCTACCCTGCGTACA CATCCTACCTCGATTGGGCAAGTGACCCTTATTCTGCCAACCTACCCTGCGTACA CATCCTACCTCGATTGGGCAAGTGACCCTTATTCTGCCAACCTACCCTGCGTACA CATCCTACCTCGATTGGGCAAGTGACCCTTATTCTGCCAACCTACCCTGCGTACA CATCCTACCTCGATTGGGCAAGTGACCCTTATTCTGCCAACCTACCCTGCGTACA CTTCATTCCTAGACTGGGCTAGCGACCCTTACTCAGCAAATCTTGTATGCGTCCA CATCATTTCTCGACTGGGCTAGTGACCCCTATTCTGCTAACCTAGTATGCATTCA CCACTTACTTGGACTGGGCCAGTGACCCCTACTCAGCTAATCTACCATGCGTCCA CTTCTTATTTAGATTGGGCAAGTGACCCTTATTCTGCCAATCTGCCCTGTGTCCA CTTCTTATTTAGATTGGGCAAGTGACCCTTATTCTGCCAATCTGCCCTGTGTCCA CTTCTTATTTAGATTGGGCAAGTGACCCTTATTCTGCCAATCTGCCCTGTGTCCA

* ** **** ** ** ** **

alignments.txt Porcine CGTCATTTTTAGATTGGGCAAGTGATCCGTACTCAGCTAATCTCCCATGCACTCA 3025 AAGCA Phyllostomus CGTCCTTCTTAGACTGGGCAAGTGACCCTTATTCTGCTAATCTCCCTTGTACACA GAGCA 3025 ** * Hendra TCCAA 3415 Nipah CCCAA 3415 Niniventer TCCAA 3124 Berylmys CCCCA 3088 Gierle TCCAA 3112 Feline CCCTA 3155 Dolphin TCCGA 3085 Saiga_antelope, 3085 CCCGA Goitered_gazelle, CCCGA 3085 Domestic_sheep, CCCGA 3085 Wild_goat, 3085 CCCGA Bharal, 3085 CCCGA Domestic_goat, CCCGA 3085 Measles CCCAA 3107 Rinderpest CCCGA 3085 Phocine_distemper_north_sea TCCAA 3107 Phocine_distemper_caspian_sea, TCCGA 3085 Dog_canine_distemper 3085 TCCGA Ferret, TCCGA 3085 Porcine 3085 TCCTA Phyllostomus TCCTA 3085 ** * Hendra TTTCC 3475 Nipah 3475 CTTCT Niniventer ATTTT 3184 Berylmys TTATC 3148 Gierle 3172 ATTTC Feline GTTTC 3215 Dolphin 3145 TTTTC

Saiga_antelope,

TTTCC 3145

TTACAAAAACGATCAAGAATATAACGGCTAGGACTATATTGAGGACATCACCGAA TCACTAAAACAATTAAAAATATCACAGCAAGGACTATACTGAGGAACTCACCGAA TTACTAAAATTATTAAGAATATCACCGCAAGGTATGTACTCATGCATAGTCCCAA TTACTAAGTTAATAAAGAATATAACTGCTAGGTATGTCCTAACAAGAAGCCCGAA TAACTAAGCTAATTAAGAATATCACAGCCAGATATGTTTTAACAAGAAGTCCGAA TGACCAAGGTTTTAAAAAATGTAACGGCAAGATATGTACTTATGCATAGTCCCAA TCACTCGCCTTCTCAAAAACATCACTGCACGATATATTTTAATCAGCAGCCCAAA TCACTCGCCTTCTCAAAAACATCACTGCACGATATATTTTAATCAGCAGCCCAAA TAACTCGCCTTCTCAAAAACATCACTGCACGATATATTTTAATCAGCAGCCCAAA TAACTCGCCTTCTCAAAAACATCACTGCACGATATATTTTAATCAGCAGCCCAAA TAACTCGCCTTCTCAAAAACATCACTGCACGATATATTTTGATCAGCAGCCCAAA TAACTCGCCTTCTCAAAAACATCACTGCACGATATATTTTAATCAGCAGCCCAAA TCACTAGACTCCTCAAGAACATAACTGCAAGGTTTGTCCTAATCCATAGTCCAAA TAACAAGGCTTCTCAAGAATATCACCGCAAAGTATGTTCTAATCAACAGCCCCAA TAACTCGACTTTTAAAGAATATTACAGCTAGGCATGTGCTCATAAACAGTCCCAA TAACCCGACTCCTTAAAAATATCACAGCCAGGCATGTCCTTATCAACAGTCCAAA TAACCCGACTCCTTAAAAATATCACAGCTAGGCATGTCCTTATCAACAGTCCAAA TAACCCGACTCCTTAAAAATATCACAGCTAGGCATGTCCTTATCAACAGTCCAAA TGACCAGAGTCCTTAAAAATGTGACAGCTAGGCACGTGCTAGTCAACAGCCCAAA TGACTAGAGTCCTCAAGAATGTCACTGCAAGGCATGTCCTAATCAACAGTCCTAA TGCTGAAGGGTCTATTCCATGATAAATCATTCGAGGAAGATCTGGAGCTTGCTAC

TGCTAAAGGATTTGTTCCATGAGCAGTCAAATGAAGAAGATCAAGAAATGGCGAC TGTTACAAGACTTGTTCCATGAAGGGTCCCAAGAGGAGGATAATGAATTGGCTAT TGCTACAAGGACTCTTCCATGACAAGTCTCAAGATGAAGACGATAGTCTTGCTGC TGCTCAAAGATTTGTTCCATGAAAAGTCTCAGGAAGAAGATGAAATCCTTGCTGA TGTTAAGGGGGTTATTCCATGCGGATAGCCATGAGGTAGATGAGAGTTTAGCAAC TGCTGAAAGGGTTATTTCATGAGGGGAGTAGAGATGAAGACGAGGAGCTTGCAAG

Domestic_sheep,

TTTCC

TTTCT

Goitered_gazelle,

3145

3145

```
Wild_goat,
TTTCT
       3145
Bharal,
TTTCC
       3145
Domestic_goat,
TTTCC
       3145
Measles
ATTCC
       3167
Rinderpest
CTTTC
       3145
Phocine_distemper_north_sea
       3167
TTTTT
Phocine_distemper_caspian_sea,
TTTCT
       3145
Dog_canine_distemper
TTTCT
       3145
Ferret,
TTTCT
       3145
Porcine
TTTCC
       3145
Phyllostomus
ATTCT 3145
Hendra
       3535
TTTGA
Nipah
ATTGA
       3535
Niniventer
TGTCA
       3244
Berylmys
TTTGA
       3208
Gierle
CTTGA
       3232
Feline
AGTAA 3275
Dolphin
      3205
CATCG
Saiga_antelope,
TATAA
      3205
Goitered_gazelle,
TATAA
       3205
Domestic_sheep,
CATAA
       3205
Wild_goat,
CATAA
       3205
Bharal,
       3205
TATAA
Domestic_goat,
       3205
CATAA
Measles
TGTCA
       3227
Rinderpest
TATAA
       3205
Phocine_distemper_north_sea
       3227
GATCA
Phocine_distemper_caspian_sea,
GATCA
       3205
Dog_canine_distemper
AATCA
       3205
Ferret,
GATCA
       3205
Porcine
                                    TGATGGATAGAGGAGTGATTATACCTAGGGCCGCTCATGAGATCTTAGACAACAC
```

TGCTGAAAGGGTTATTTCATGAGGGGAGTAGAGATGAAGACGAGGAGCTTGCAAG TGCTGAAAGGATTGTTTCATGAGGGGAGTAGAGATGAAGACGAGGAGCTTGCAAG TGCTGAAAGGATTGTTTCATGAGGGGAGTAGAGATGAAGACGAGGAGCTTGCAAG TGCTGAGAGGATTGTTTCATGAGGGGAGTAGAGATGAAGACGAGGAGCTTGCAAG TGCTGAAAGGATTGTTTCATGAGGGGAGTAGAGATGAAGACGAGGAGCTTGCAAG TGTTAAAAGGGTTATTCCATGATGACAGTAAAGAAGAGGACGAGAGACTGGCGGC TGCTCAGAGGTTTATTCCATGATGACAGCAAGGAAGAAGATGAGCAATTAGCCAC TGTTAAAGGGATTATTTCATGATGACAGTCAGGCCGAGGATGAGGCCCTAGCTGC TGCTGAGAGGATTGTTCCATGATGAAAGTCAGGATGAGGATGAAGCTTTAGCAGC TGCTGAGAGGATTGTTCCATGATGAAAGTCAGGATGAGGATGAAGCTTTAGCAGC TGCTGAGAGGATTGTTCCATGATGAAAGTCAGGATGAGGATGAAGCTTTAGCAGC TGCTAAAGGGGTTGTTTCACAGTGAAAGCCAGGAAGAGGATGAGACCCTAGCCAG TGCTGAAAGGGCTGTTCCATCATGAGAGCCAAGAAGAGGATGAGTCCCTAGCGGC TAATGGATCGTAGAATTATATTGCCCAGAGCCGCACATGAAATTTTAGATAATTC TAATGGACAGGAGGTTATATTACCTAGAGCCGCTCATGAGATACTGGATAATTC TATTAGATAGAGAAATTATTATTCCTAGAGCAGCCCATGAAATTTTAGACAATAC

TGATGGATAGGGATATAATAATACCAAGAGCTGCCCATGAAATTTTGGATAATAG TTCTGGACAGAGCGATCATTGTACCTAGAGCAGCACACGAAATTCTTGATAACAG TGTTAGACCGACACTTAATAATCCCTAGAGCACACGAGATTTTATCAAATTC TCATGGATAGACACATCATCAGACCTAGAGCTCATGAGATTCTCGACAACAG TAATGGATCGCATATAATTGTTCCAAGAGCTGCACATGAAATCTTAGACCATAG TAATGGATCGGCATATAATTGTTCCAAGAGCTGCACATGAAATCTTAGACCATAG TAATGGATCGGCATATAATTGTTCCAAGAGCTGCACATGAAATCTTAGACCATAG TAATGGATCGGCATATAATTGTTCCAAGAGCTGCACATGAAATCTTAGACCATAG TAATGGATCGGCATATAATTGTTCCAAGAGCTGCACATGAAATCTTAGACCATAG TAATGGATCGGCATATAATTGTTCCAAGAGCTGCACATGAAATCTTAGACCATAG TCATGGACAGGCATATTATAGTACCTAGGGCAGCTCATGAAATCCTGGATCATAG TAATGGACAGGAGTGTAATAGTCCCGAGAGCCGCCCACGAAATATTAGACCATAG TAATGGACAGAAGGTTATCATTCCAAGAGCTGCTCACGAGATTCTAGACAATAC TAATGGATAGGAAAATTATTATCCCAAGGGCTGCACATGAAATTCTNGATAACAC TGATGGATAGGAAAATTATTATCCCAAGGGCTGCACATGAAATTCTGGATAACAC TGATGGATAGGAAAATTATTATCCCAAGGGCTGCACATGAAATTCTAGATAACAC

TATTA 3205 Phyllostomus AATCA 3205 Hendra ATCAG 3595 Nipah 3595 ATCAG Niniventer GAGCG 3304 Berylmys GACTG 3268 Gierle AACAG 3292 Feline TGCTA 3335 Dolphin GGCTA 3265 Saiga_antelope, AACAA 3265 Goitered_gazelle, AACAA 3265 Domestic_sheep, AACAA 3265 Wild_goat, AACAA 3265 Bharal, 3265 AACAA Domestic_goat, AACAA 3265 Measles AGCCA 3287 Rinderpest GACTA 3265 Phocine_distemper_north_sea GGCAA 3287 Phocine_distemper_caspian_sea, AGCAA 3265 Dog_canine_distemper AGCAA 3265 Ferret, AGCAA 3265 Porcine GGCTA 3265 Phyllostomus AGCAA 3265 Hendra 3655 TTATA Nipah TTATA 3655 Niniventer CTATG 3364 Berylmys TTACA 3328 Gierle TTACC 3352 Feline TTACC 3395 Dolphin TTATG 3325 Saiga_antelope,

TTATG

3325

Goitered_gazelle,

CAGGTGCTAGAGAGGAAATTGCTGGATTACTTGACACAACAAAGGGGCTAATAAG CAGGTGCCAGAGAGAAATTGCTGGTTTATTAGATACAACTAAAGGCTTGATCAG CTGGTGCAAGAAAGCATAGCAGGTATGCTTGATACTACTAAAGGGTTAATTAG CTGGGGCGAGAGAGAGCATTGCAGGTATGCTTGACACAACAAGGGGTTGATTCG CAGGTGCTAGAGAATCTATAGCAGGTATGCTTGACACTACTAAGGGTTTAATCCG CAGTGGCTCGCGAATCACTTGCAGGGATGCTCGATACTACTAAAGGGCTAATAAG CCGGAGCAAGAGAAGCTATAGCCGGGATGTTGGACACCACCAAGGGTCTGATTAG CCGGAGCAAGAGAAGCTATAGCCGGGATGTTGGACACCACCAAGGGTCTGATTAG CCGGGGCAAGAGAAGCTATAGCCGGGATGTTGGACACCACCAAGGGTCTGATTAG CCGGGGCAAGAGAAGCTATAGCCGGGATGTTGGACACCACCAAGGGTCTGATTAG CCGGGGCAAGAGCTATAGCCGGGATGTTGGACACCACCAAAGGTCTGATTAG CCGGGGCAAGAGAGCTATAGCCGGGATGTTGGACACCACCAAGGGTCTGATTAGCAGGGGCAAGAGAGTCTATTGCAGGCATGCTAGATACCACAAAAGGCCTGATTCG CTGGAGCCCGGGAAGCAATTGCAGGGATGCTAGATACAACTAAAGGACTCATCAG CGGGTGCAAGGGAAGCAATTGCAGGGATGCTGGATACGACGAAGGGACTGATTAG CAGGTGCAAGAGGCAATCGCCGGAATGCTAGACACCACAAAGGGGTTGATACG CGGGTGCA AGAGAGGCA ATTGCCGGA ATGCTAGACACCACA A AGGGGTTGA TA AG CGGGTGCAAGAGAGGCAATTGCCGGAATGCTAGACACCACAAAGGGGTTGATAAG CCGGTGCACGAGAGGCAATTGCTGGGATGCTCGACACCACCAAAGGGCTTATTCG CAGGTGCCAGGGAAGCCATTGCCGGGATGCTGGACACCACCAAAGGACTCATTAG * ** ** ** **

TAATGGATAGAGGGGTAATTATACCCAGAGCAGCCCATGAGATCCTGGACAATAC

GATTGAAAAAGAGCGGGATACAACCTAAGTTAGTGTCTAGACTGTCTAACCATGA
GGCTAAGAAAGAGTGGACTTCAGCCAAAGTTAGTTTCTAGATTATCTCATCATGA
GGTTACACAGGGGTGGGTTAAGACCTACCTTAATAAGGAAAATCTCAATTCATGA
GGCTAAAACGAGGAGGGTTGAGACCTCATATTGTCCAAAAAATTATCCTTATACGA
GATTGCGGAAAGGCGGGCTGAGACCTAGTCTAATCACCAAATTGTCCCATTACGA
GTATGTCAAGAGGTGGGTTGACCTCATCACTTGTTTTAAAATTATCAACATATGA
GTATGAAAAGAGGTGGACCTCACCCCACGAATCATCACGAGATTATCAAATTATGA
GTATGAAACGGGGCGGCCTCACCCCTCGAGTCTTAGCCCGCCTTTCCAATTATGA
GTATGAAACGGGGCGGCCTCACCCCTCGAGTCTTAGCCCGCCTTTCCAATTATGA

Domestic_sheep, 3325

3325

TTATG

TTATG Wild_goat,

TTATG 3325 Bharal, TTATG 3325 Domestic_goat, TTATG 3325 Measles CTATG 3347 Rinderpest CTATG 3325 Phocine_distemper_north_sea TTATG 3347 Phocine_distemper_caspian_sea, TTATG 3325 Dog_canine_distemper TTATG 3325 Ferret, TTATG 3325 Porcine CTATG 3325 Phyllostomus TTATG 3325 Hendra ATCCC 3715 Nipah ATCAT 3715 Niniventer TTCGA 3424 Berylmys TGATG 3388 Gierle TGACC 3412 Feline AAGCG 3455 Dolphin CGATA 3385 Saiga_antelope, TGACA 3385 Goitered_gazelle, TGACA 3385 Domestic_sheep, TGACA 3385 Wild_goat, TGACA 3385 Bharal, 3385 TGACA Domestic_goat, 3385 TGACA Measles 3407 TGACA Rinderpest 3385 TGATA Phocine_distemper_north_sea AGACC Phocine_distemper_caspian_sea, 3385 CGATC Dog_canine_distemper CGATC 3385 Ferret, 3385 CGATC Porcine TGATC 3385

GTATGAAACGGGGTGGCCTCACCCCTCGAGTCTTAGCCCGCCTTTCCAATTATGA GTATGAAACGGGGTGGCCTCACCCCTCGAGTCTTAGCCCGCCTTTCCAATTATGA GTATGAAACGGGGTGGCCTCACCCCTCGAGTCTTAGCCCGCCTTTCCAATTATGA GTATGAAACGGGGTGGCCTCACCCCTCGAGTCTTAGCCCGCCTTTCCAATTATGA GCATGAGGAAGGGGGGTTAACCTCTCGAGTGATAACCAGATTGTCCAATTATGA GCTCCAGAAGAGGGGGCCTGACCACCAGAGTGATAGCAAGACTATCCACATATGA GTATGAGGAGGAGGACTTACTCCGAGGATAATAACTCGGTTGTCAACTTATGA GCATGAAAAGAGGAGGTCTAACCCCTAGAATAATAACCCGTTTGTCAACTTATGA GCATGAAAGGGGGGTCTAACCCCTAGAATAATAACCCGTTTGTCAACTTACGA GCATGAAAAGAGGGGTCTAACCCCTAGAATAATAACCCGTTTGTCAACTTACGA GCATGCAAAGAGGGCCTAACTCCAAGGATAATCACGCGATTATCCACATATGA GTATGCAGAGAGGGGGGTTAACTCCAAGAATCATTACTAGGCTGACCACCTATGA * ** * ATCAGTTCCTGATACTCAATAGACTTTTGTCCAATAAAAAGAGAAACGATCTTAT ATCAATTTTTAATACTGAACAAACTTCTATCAAACAGAAGACAAAATGACTTGAT AACAATATAAAAATGCCATAGCAATGTTACATAATAATCAGTTTAACCCGCTGAT GGCAATTTCAAAATGCCATTAGATTACTTGAAAACCAAAAGGCTGATGACCTTAT GGCAGTTCCAGAATGCAATCAGGCTTCTAGAGAACCCAAGAAACAATGATTTAAT AACAGTTTAGAACATGTCTTGAATGGCTTTATGCTCCTACTACGGGAATTGCTGT AACAATTCCGATCCGGGATAACACTATTAACAAAGAAGGGCAGTGTTATCTCAT AACAATTCCGATCCGGGATAACACTATTAACAAAGAAAGGGCAGTGTTATCTCAT AACAATTCCGATCCGGGATAACACTATTGACAAAGAAAGGGCAGTGTTATCTCAT AACAATTCCGATCCGGGATAACACTATTGACAAAGAAAGGGCAGTGTTATCTCAT AACAATTCCGATCCGGGATAACACTATTGACAAAGAAAGGGCAGTGTTATCTCAT AACAATTCCGATCCGGGATAACACTATTGACAAAGAAAGGGCAGTGTTATCTCAT AGCAGTTTAGATCTGGGATGGTGCTTCTAACAGGCTCAAAGAGAAATTATCTCAT AGCAGTTCAGAGCCGGCATCAGGTTGCTATCAGGGAAGACGTGATCCACTCAT AACAATTTAGGGCAGGTATCAGACTGTTGTCAGGGAAGGGGCATGATCCGCTCAT

AGCAATTTAGGGCAGGTATCAGACTGTTCTCAGGGAAGGGGCATGATCAGCTCAT

AGCAATTTAGGGCAGGTATCAGACTGTTGTCAGGGAAGGGGCATGATCCGCTCAT

ACCAATTCAAGGCTGGTATGAGATTGTTCATGGGTAAAGGAGTCAATTTGTTAAT

Phyllostomus AGATC 3385 ACCAGTTCAAGACCGGAATGAGACTGTTTATGGGCAAGGGCACAAACCTCTTGAT

Hendra TCTTG 3775 Nipah 3775 ATTAG Niniventer GCTGA 3484 Berylmys ACTTG 3448 Gierle CCTTG 3472 Feline CCTAA 3515 Dolphin ACTCG 3445 Saiga_antelope, GTTGG 3445 Goitered gazelle, GTTGG 3445 Domestic_sheep, GTTGG 3445 Wild_goat, GTTGG 3445 Bharal, 3445 GTTGG Domestic_goat, 3445 GTTGG Measles ACTAG 3467 Rinderpest 3445 GCTCG Phocine_distemper_north_sea ATTAG 3467 Phocine_distemper_caspian_sea, GCTGG 3445 Dog_canine_distemper GCTGG 3445 Ferret, 3445 GCTGG Porcine TTTGG 3445 Phyllostomus ATTAG 3445

Hendra

TGGAA Nipah

GGGAA

AGGGG

Gierle

Feline AAACA

Dolphin

AGGGT

CGGCT

CGGCT

AGGCT

Niniventer

Berylmys AGGTG

3835

3835

3544

3508

3532

3575

3505

3505 Goitered_gazelle,

3505

Saiga_antelope,

CTAAAACATGTTCAGTGGATTTGGCCAAGGCTCTTCGTTGTCATATGTGGAGAGA CAAATACTTGCTCAGTTGACTTGGCACGAGCATTGAGATCTCACATGTGGAGGGA TTGAGGCATGTTCAGTTTCTCTTGCTCAAGCAATAAGAAAACATATGTGGGCAAA TTTCAGTTTGTTCTGTATCACTAGCTCAGGCACTCAGAAAACATATGTGGAGTGC CAGAAGTTTGCTCTGTTTCCCTTGCACAGGCTTTAAGGAAACACATGTGGAACCA TTGATTCTTGCTCTGTATTCTTAGCTAAGACCATCCGGAAGAGAATGTGGGTTCA GGGAGTCTTGCTCAGTCCAGCTGGCCCGAGCCCTCAGAAGTCACATGTGGGCGAA AGGACTCGTGCTCGCTGCAGCTCGCTATAGCTCTGAGGGGCCACATGTGGGCTAA AGGACTCGTGCTCGCTGCCCTATAGCTCTGAGGGGCCACATGTGGGCTAA AGGACTCGTGCTCGCTGCAGCTCGCTATAGCTCTGAGGAGCCACATGTGGGCTAG AGGACTCGTGCTCGCTGCAGCTCGCTATAGCTCTGAGGAGCCACATGTGGGCTAG AGGATTCGTGCTCGGTGCAGCTCGCTATAGCTCTGAGGAGCCACATGTGGGCTAG AGGACTCGTGCTCGGTGCAGCTCGCTATAGCTCTGAGGAGCCACATGTGGGCTAG AAGAGTCATGTTCAGTGCAGCTGGCTAGAGCCCTAAGAAGCCATATGTGGGCAAG GAGACTCATGCTCAGTCCAGCTGGCTAGGGCTCTGAGAAGCCACATGTGGGCCAG AAGACTCATGCTCTGTACAACTAGCAAGAGCATTGAGGAATCATATGTGGGCTAA AAGACTCATGTTCCGTCCAGCTAGCGAGAGCATTAAGGAACCACATGTGGGCCAA AAGACTCATGTTCCGTCCAGTTAGCGAGAGCATTAAGGAACCACATGTGGGCCAA A AGACTCA TGTTCCGTCCAGTTAGCGAGAGCATTAAGGAACCACATGTGGGCCCAA AGGATTCATGTTCGGTCCAGCTCGCCCGAGCACTTAGAAATCACATGTGGGCAAC AGGACTCATGTTCAGTCCAGCTTGCAAGAGCTCTGCGGAATCACATGTGGGCAGC ** ** ** * **

CTCTTGGTCGATCAATCTATGGACTTGAAGTGCCTGACGCTTTGGAAGCAATGAC CGTTAGGTAGAGTAATATACGGTCTTGAGGTACCAGATGCACTTGAGGCTATGGT CAAGAGGCCGACCGATTTATGGCTTGGAAGTCCCGGATATCCTAGAATGTCTTAACAAGAGGCAGACCTATATATGGATTAGAGGTTCCAGATGTGTTAGAATGTTTAAA CAAAAGGCCGGCCTATATATGGCCTTGAGGTCCCTGATGTGATTGAGTGCCTAAC CTAAAGGAAGGGAGATTTATGGGTTAGAAGTACCTGACATTTTGGAATGTATGCA CAAGAGGAAGGTCGATATACGGACTTGAGGTTCCTGTTGTACTAGAATCAATGAA CTCGCGGGAGACCAATCTATGGGTTGGAGGTGCCTGATGTATTAGAATCGATGAA CTCGCGGGAGACCAATCTATGGGTTGGAGGTGCCTGATGTATTAGAATCGATGAA

TGGTT

Porcine

Phyllostomus

CGGAT

3565

3565

43 Domestic_sheep, CTCGCGGGAGACCAATCTATGGGTTGGAGGTGCCCGATATATTGGAATCGATGAA CGGCT 3505 Wild_goat, CTCGCGGGAGACCAATCTATGGCTTGGAGGTGCCCGATATATTAGAATCTATGAA CGGCT 3505 Bharal, CTCGCGGGAGACCAATCTATGGGTTGGAGGTGCCCGATATATTAGAATCGATGAACGGCT 3505 Domestic_goat, $\tt CTCGCGGGAGACCAATCTATGGGTTGGAGGTGCCCGATATATTAGAATCGATGAA$ CGGCT 3505 Measles CTCGAGGACGCCTATTTACGGCCTTGAGGTCCCTGATGTACTAGAATCTATGCG AGGCC 3527 CCCGAGGAAGGCCCATATATGGCTTAGAGGTGCCGGACGTGCTAGAATCAATGAG Rinderpest AGGCC 3505 Phocine_distemper_north_sea CTAAGGGTAGACCTATTTATGGGCTAGAAGTGCCGGACATACTAGAGTCTATGAG AGGAT 3527 Phocine_distemper_caspian_sea, CGAAGGGTCGTCCTATTTATGGTCTAGAAGTCCCGGATATCCTTGAATCAATGAA GGGTT 3505 CGAAGGGTCGTCCTATTTATGGTCTAGAAGTCCCGGATATCCTTGAATCAATGAA Dog_canine_distemper 3505 GGGTT Ferret, CGAAGGGTCGTCCTATTTATGGTCTAGAAGTCCCGGATATCCTTGAATCAATGAA GGGTT 3505 Porcine CCAAAGGAAGACCAATATACGGATTAGAAGTGCCTGATATCTTGGAATCAATGAA GGGCC 3505 Phyllostomus CCCGAGGACGACCAATCTATGGATTAGAAGTACCTGATATCCTAGAATCAATGAG AGGTC 3505 ** ** ** * * * * * * GATATATTACAGGGAGTATGGAATGCCAACTTTGTGATCAAGGGAATACTATGTA Hendra CGGTT 3895 GGTATATAACAGGGAGCTTAGAGTGCCAAATTTGTGAGCAGGGAAACACGATGTA Nipah 3895 TGGGT Niniventer TGGTT 3604 Berylmys TTATCATTAAAGGTCATAGTAACTGTATCATGTGTGAACAAGGTTCCGATCACTA TGGTT 3568 ATGTAATAGAGGGTCATACAAATTGTCTGGCATGTGAGGAGGGTTCTGAGTATTA Gierle TGGAT 3592 Feline ATATTATTGTTGATCACGAAGATTGTTACTCATGTATTCAAGGATCAAGATATTA TACAT 3635 Dolphin ACATTATTAAACGTCATGAGTCTTGTTCATTATGTGAAACTGGCTCACTGAATTA 3565 TGGTT ACCTTATTA A ACGCCACGAGTCGTGTGTGTTATCTGTGA A ACGGGCTCA AGTCACTA Saiga_antelope, CGGAT 3565 Goitered_gazelle, ACCTTATTAAACGCCACGAGTCGTGTGCTATCTGTGAAACGGGCTCAAGTCACTA CGGAT 3565 Domestic sheep, ACCTTATCAAACGCCACGAGTCTTGTGCTATCTGTGAGACGGGCTCAAGTCACTA CGGAT 3565 Wild_goat, ACCTTATCAAACGCCACGAGTCTTGTGCTATCTGTGAGACGGGCTCAAGTCACTA CGGAT 3565 Bharal, ACCTTATCAAACGCCACGAGTCTTGTGCTATCTGTGAAACGGGCTCAAGTCACTA CGGAT 3565 Domestic_goat, ACCTTATCAAACGCCACGAGTCTTGTGCTATCTGTGAAACGGGCTCAAGTCACTA 3565 CGGAT ACCTTATTCGGCGTCATGAGACATGTGTCATCTGCGAGTGTGGATCAGTCAACTA Measles 3587 CGGAT Rinderpest ACCTGATCCAACGCCATGCAACCTGCATCTTATGTGACTTTGGTTCAGCCAATTA 3565 TGGTT ATATGATTAGGAGGCATGAGTCCTGTTCAATGTGTTCAGCTGGTTCTCTCAATTA Phocine_distemper_north_sea CGGTT 3587 ATATGATCAGAAGACATGAATCCTGTTTGCTTTGTGCATCAGGCTCTCATAACTA Phocine_distemper_caspian_sea, 3565 TGGTT ATATGATTAGAAGACATGAATCCTGTTTGCTTTGCGCATCAGGCTCTCATAACTA Dog_canine_distemper TGGTT 3565 Ferret, ATATGATCAGAAGACATGAATCCTGTTTGCTTTTGCGCATCAGGCTCTCATAACTA

AATTAATCATGAGGCATGAGTCATGTAACCTATGTATTCAGGGATCGCAAAATTA

AGTTGATTATGAGGCATGAATCTTGCCATATGTGTATGCAGGGGTCACAAAATTA

TGGAT 3565

*

Hendra

CATTA 3955

Nipah

AATAA 3955 Niniventer

GTTAA 3664

Berylmys

TCTCA 3628

Gierle

TCTAA 3652

Feline

TCTCC 3695

Dolphin

TTTAC 3625 Saiga_antelope,

TCTTC 3625

Goitered_gazelle,

TCTTC 3625

Domestic_sheep,

TCTTC 3625

Wild_goat,

TCTCC 3625

Bharal,

TCTTC 3625

Domestic_goat,

TCTTC 3625

Measles

CTTGA 3647

Rinderpest

ACTCA 3625

Phocine_distemper_north_sea

ATTAA 3647

Phocine_distemper_caspian_sea,

ACTGA 3625

Dog_canine_distemper

ACTGA 3625

Ferret,

ACTGA 3625

Porcine

CCTTA 3625

Phvllostomus

CCTCA 3625

*

Hendra

CGTCA 4015

Nipah

TGTCA 4015

Niniventer

TGTTA 3724

Berylmys

TGTTA 3688

Gierle

TGTTA 3712

Feline

TGTGA 3755

Dolphin

TGCCA 3685

Saiga_antelope,

TGTTA 3685

Goitered_gazelle,

TGTTA 3685

Domestic_sheep,

 $\tt GGTTTTTCGTGCCACGAGATTCACAATTAGACCAAGTGAATAAAGAGCACTCATC$

GGTTCTTTGTCCCCTCAAATTGCCAGTTAGATAGTATAACTATGTCTACTAATGC

GGTTTTTTATACCAGCTCAATGTCAACTCGATCAAATTACCAATGAGACGAACTC

GGTTCTTTGTTCCGTCAAACTGTGAATTAGACCAAATCACTGCCCCAACAAATTC

GGTTCTTTGGTCCCGCCAATTGCCAATTAGATAATATTTCCAAGGAGACATCATC

GGTTTTTCGTCCCTGCAGGGTGCCAGCTTGACGATGTATCTAGAGAGACTTCGGC

GGTTTTTCGTCCCTGCAGGGTGCCAGCTTGACGATGTATCTAGAGAGACTTCGGC

GGTTTTTTGTCCCTGCAGGGTGCCAGCTTGACGATGTATCTAGAGAGACTTCGGC

GGTTTTTTGTCCCTGCAGGGTGCCAGCTTGACGATGTATCTAGAGAGACTTCAGC

GGTTTTTCGTCCCTGCAGGGTGCCAGCTTGACGATATATCTAGAGAGACTTCGGC

GGTTTTTCGTCCCTGCAGGGTGTCAGCTTGACGATGTATCTAGAGAGACTTCGGC

GGTTTTTTGTCCCCTCGGGTTGCCAACTGGATGATATTGACAAGGAAACATCATC

GGTTCTTTGTACCAGCCAATTGTCAGCTTGATAGTATTACAGAAGGAACATCTGC

GGTTTTTTGTACCAGCGAATTGCCAATTGGATAGTATTACAGAGGGAACATCTGC

GGTTTTTTATACCAGCGAATTGCCAATTGGATAGTATTACAGAGGGAACATCTGC

GGTTTTTTATACCAGCGAATTGCCAATTGGATAGTATTACAGAGGGAACATCTGC

GGTTTTTTGTGCCATCAAATTGCCAACTCGATAACATTACATCAGGCACATCTAG

GGTTCTTTGTCCCAGCAAACTGTCAGTTAGACAACATCACTGCTAGTACCTCTAG

GGCAT 3745

3685

TGTTA

Wild_goat, 3685 TGTTA Bharal, TGTTA 3685 Domestic_goat, TGTTA 3685 Measles GAGTCCCATATATTGGTTCTACCACTGATGAGAGAACAGACATGAAGCTCGCCTT 3707 CGTAA Rinderpest GGGTCCCCTACATCGGATCGACAACAGATGAGAGGACTGATATGAAGCTCGCATT TGTTA GGGTGCCATACATTGGGTCTACAACTGAAGAGAGAACGGATATGAAGCTAGCATT Phocine_distemper_north_sea 3707 TGTGA Phocine_distemper_caspian_sea, GGGTGCCATACATAGGGTCCACAACAGAAGAAGAACAGACATGAAACTAGCATT CGTCA 3685 GGGTGCCATACATAGGGTCCACAACAGAAGAAGAACAGACATGAAACTAGCATT Dog_canine_distemper CGTCA 3685 Ferret, GGGTGCCATACATAGGGTCCACAACAGAAGAAGAACAGACATGAAACTAGCATT CGTCA 3685 Porcine GGGTTCCATATATCGGATCTACCACAGAGGAGAAACGGATATGAAGCTGTCATT TGTCA 3685 Phyllostomus GAGTTCCATACATCGGATCCACGACAGAAGAGAGAACCGATATGAAACTTTCGTT TGTCA 3685 ** ** ** * AGAGACCGACAAGAGCACTGAGATCTGCCATCCGAATTGCAACTGTTTATACCTG Hendra 4075 GGCAT AAAGACCAACTAAGGCCTTGCGTTCTGCTATCAGAATTGCGACAGTATATACTTG Nipah GGCCT 4075 AATCTCCTAGTCGACCACTTAAAGCCGCTGTTCGGATTGCAACAGTTTATACATG Niniventer GGCTT 3784 Berylmys 3748 GGCCT GATCCCCAAGTCGACCGCTTAAGGCTGCAGTGCGCATTGCTACTGTATACACCTG Gierle 3772 GGCAT GGTCACCTAGTCGGCCACTTAAAGCAGCAGTTCGAATTGCAGCAGTATATACATG Feline GGCTT 3815 Dolphin AGTCCCCTAGTCGCTCCCTCAAATCTGCCGTGAGAATTGCTACAGTGTACTCTTG 3745 GGCTT GGTCTCCA AGTAGATCCCTCA AATCAGCAGTTAGAATTGCAACAGTTTACTCATG Saiga_antelope, GGCTT 3745 Goitered_gazelle, GGTCTCCAAGTAGATCCCTCAAATCAGCAGTTAGAATTGCAACAGTTTACTCATG GGCTT 3745 Domestic_sheep, GGTCTCCAAGTCGATCCCTCAAGTCAGCAGTCAGAATTGCAACAGTTTACTCATG GGCCT 3745 GGGCTCCAAGTCGATCCCTTAAATCAGCAGTCAGAATTGCAACAGTTTACTCATG Wild_goat, GGCCT 3745 Bharal, GATCTCCAAGTAGATCCCTCAAATCAGCAGTTAGAATTGCAACAGTTTACTCATG GGCCT 3745 Domestic_goat, GGTCTCCAAGTAGATCCCTCAAATCAGCAGTTAGAATTGCAACAGTTTACTCATG GGCCT 3745 Measles GAGCCCCAAGTAGATCCTTGCGATCTGCCGTTAGAATAGCAACAGTGTACTCATG GGCTT 3767 AGTCACCCAGTCGAACCCTGCGGTCAGCTGTGCGGATAGCCACCGTGTACTCATG Rinderpest GGCAT 3745 AGTCTCCAAGCAGATCCCTTAAATCAGCAGTTAGGATAGCCACTGTCTACTCTTG Phocine_distemper_north_sea GGCTT 3767 AATCTCCTAGTAGGTCTCTGAAATCAGCAGTGAGAATAGCAACTGTGTACTCATG Phocine_distemper_caspian_sea, GGCCT AATCTCCTAGTAGGTCTCTAAAATCAGCAGTGAGAATAGCAACTGTGTACTCATG Dog_canine_distemper 3745 GGCCT Ferret, AATCTCCTAGTAGGTCTCTAAAATCAGCAGTGAGAATAGCAACTGTGTACTCATG GGCCT 3745 Porcine AGTCACCCAGCCGATCACTTAAATCAGCTGTAAGAATAGCCACCGTATACTCTTG GGCCT 3745 Phyllostomus AATCACCAAGTCGGTCTCTTAAGTCAGCAGTGAGAATCGCCACTGTCTACTCGTG

** **

*** *

Hendra CAACA 4135 Nipah AAACA 4135 Niniventer TAATA 3844 Bervlmvs 3808 TAATG Gierle TAATA 3832 Feline AAATA 3875 Dolphin 3805 TAACA Saiga_antelope, CAATA 3805 Goitered_gazelle, CAATA 3805 Domestic sheep, CAACA 3805 Wild_goat, CAACA 3805 Bharal, 3805 CAATA Domestic_goat, CAATA 3805 Measles CAATG 3827 Rinderpest AAAAG 3805 Phocine_distemper_north_sea 3827 Phocine_distemper_caspian_sea, GAACA 3805 Dog_canine_distemper GGACA 3805 Ferret, 3805 GAACA Porcine 3805 TAATA Phvllostomus CAATA 3805

Hendra TCACA 4195 Nipah 4195 CCATA Niniventer ACACA 3904 Berylmys ACATA 3868 Gierle TCACA 3892 Feline ACATA 3935 Dolphin 3865 TCATC Saiga_antelope, CCACC 3865 Goitered_gazelle, CCACC 3865 Domestic_sheep, CCACC 3865

ACGGAGATTCTGAAGAAAGTTGGTATGAGGCTTGGTACTTGGCTTCCCAGAGGGT ATGGGGACAATGAAGAGTGTTGGTATGAAGCTTGGTACCTAGCGTCTCAGAGGGT TTGGAGACGATGACCAGTCATGGCAGGAAGCATGGGAGATTGCTAAGCAGAGGAC TTGGTGATGACGATGAAACCTGGCAACAAGCTTGGTCACTTGCTAGACAAAGGGC TCGGTGACGATGACCAGTCGTGGCAGGAAGCATGGCATCTCGCAAGTCAAAGAGC ATGGTGATGATAATTTGTCTTGGCATGAAGCTTGGTATTTAGCAAGGACTAGAGC ATGGTGATGACGACCAGTCATGGCATGAGGCATGGACTCTAGCGAGGCAGAGAGC ACGGTGATGATGATAGCTCTTGGAACGAAGCCTGGTTGTTGGCAAGGCAAAGGGC ACGGAGATGACGACAAATCATGGAATGAAGCTTTAAAACTAGCACAGCAGAGGGC ATGGTGATGATAGCTCATGGCAAGAGCGTGGACTCTGGCAAAACAGAGAGC ATGGTGATGATGACGAATCTTGGCAAGAGGCTTGGACCTTGGCAAAACAGAGAGC ATGGTGATGACGAATCTTGGCAAGAGGCTTGGACCTTGGCAAAACAGAGAGC ATGGTGATGACGAATCTTGGCAAGAGGCTTGGACCTTGGCAAAACAGAGAGC ACGGGGATGATGAGAAATCTTGGAATGAGGCATGGCAGCTGGCCAAACAGAGAGC

TTGATATAGATGTGTTAAAAAGCTATAACTCCTGTCTCAACTTCCAACAATCTATC
TAGACTTAGATGTATTGAAAGCTATAACCCCAGTTTCCACTTCAAACAATTTATC
TAACATTAGATGAACTTAAACTTATCACACCCATTTCAACATCCACAAATTTGGC
TATCCTTAAATGACCTTAAACTAATCACCCCTATCTCAACATCAACTAATCTGGC
TCACATTGAATGATCTCCGATTGATAACACCCAATCTCTACATCTTCTAACTTGGC
TTACTTTTGACGAACTCAAATTAATAACACCTATAGCTACATCTACAAATTTAGC
TTACCTTAGAGGAGTTAAGGATGATTACCCCAATATCGACATCCACCAACTTAGC
TCACCTTAGATGAATTGAGAATGATCACTCCAGTCTCCACCACCCAACTTAGC
TCACCTTAGATGAATTGAGAATGATCACTCCAGTCTCCACCACCCAACCTAGC

* ** *

Wild_goat, TCACCTTAGATGAATTGAGAATGATCACTCCAGTCTCTACATCCACCAACCTAGC CCACC 3865 Bharal, TCACCTTAGATGAATTGAGAATGATAACTCCAGTCTCTACATCCACCAACCTAGC CCACC 3865 Domestic_goat, TCACCTTAGATGAATTAAGAATGATCACTCCAGTCTCTACATCCACCAACTTAGC CCACC 3865 Measles TGAGCCTGGAGGAGCTAAGGGTGATCACTCCCATCTCGACTTCGACTAATTTAGC GCATA 3887 Rinderpest TGAGCCTGGAGGAATTAAAAATGATAACTCCAATTTCAACATCCACCAACCTAGC ACATA 3865 Phocine_distemper_north_sea TATCTCTTGAAGAGCTCAGGATGATTACTCCTATTTCTACTTCTACAAATTTAGC TCACC 3887 Phocine_distemper_caspian_sea, TCTCACTTGAGGAATTACGGATGATTACCCCAATTTCCACTTCTACTAATCTAGC TCACC 3865 TCTCACTTGAGGAATTACGAATGATTACCCCAATTTCCACTTCTACTAATCTAGC Dog_canine_distemper TCACC 3865 Ferret, TCTCACTTGAGGAATTACGGATGATTACCCCAATTTCCACTTCTACTAATCTAGC TCACC 3865 Porcine TTACACTCGAGGAGCTCAGGATGATTACACCTGTATCAACATCCACGAATCTGGC CCACA 3865 Phvllostomus TCACACTTGAAGAACTTAGAATGATCACACCAATCTCAACCTCTACAAATCTGGC GCACA 3865 ** ** * * * * * * GACTCAGAGATAGATCTACACAGTTCAAGTTGCCAGGTAGTGTCCTTAATAGGGT Hendra TTCTA 4255 GATTGAGAGATAAATCCACACAATTTAAGTTTGCAGGGAGTGTACTCAACAGAGT Nipah TTCTA 4255 GGCTTCGTGACAAGAGCACTCAAGTTAAGTATTCAGGAACATCTTTAATACGAGT Niniventer TTCTA 3964 Berylmys GACTAAGAGATCGTAGCACACAAGTTAAATACTCAGGGACATCTCTGGTGCGGGT TTCCA 3928 Gierle GATTAAGAGATCGGAGCACTCAGGTCAAGTATTCAGGAACATCTTTGCTGCGGGT GGCAA 3952 GATTGAGAGATAGAAGCACTCAAGTTAAATATTCAGGAACTTCTTTAGTAAGAGT Feline GGCAC 3995 Dolphin GATTGAGGGATCGTAACACTCAGGTAAAGTACTCAGGTACATCGTTAATCCGAGT 3925 AGCGA Saiga_antelope, GGTTGAGGGATCGGAGTACCCAGGTGAAGTACTCGGGGACATCCCTTGTGAGGGT TGCAA 3925 Goitered_gazelle, GGTTGAGGGATCGGAGTACCCAGGTGAAGTACTCGGGGACATCCCTTGTGAGGGT TGCAA 3925 Domestic_sheep, GGTTGAGGGATCGGAGCACCCAGGTGAAATACTCGGGGACATCCCTTGTGAGGGT TGCAA 3925 Wild_goat, GGTTGAGGGATCGGAGCACCCAGGTGAAATACTCGGGGACATCCCTTGTGAGGGT TGCAA 3925 Bharal, GGTTGAGGGATCGGAGCACCCAGGTGAAATACTCGGGGACATCCCTTGTGAGGGT TGCAA 3925 Domestic_qoat, GGTTGAGGGATCGGAGTACCCAGGTGAAATACTCGGGGACATCCCTTGTGAGGGT TGCAA 3925 Measles GGTTGAGGGATCGTAGCACTCAAGTGAAATACTCAGGTACATCCCTTGTCCGAGT GGCAA 3947 Rinderpest GACTCAGGGATCGGAGTACCCAAGTTAAGTACTCTGGGACATCTTTGGTCAGAGT GGCTC 3925 Phocine_distemper_north_sea GACTAAGAGACAAAAGCACACAAGTCAAATACTCAGGTACCTCTCTTATTAGGGT CGCAC 3947 Phocine_distemper_caspian_sea, GACTAAGAGACAAGAGTACTCAAGTCAAATACTCAGGGACCTCTCTCATCAGAGT GGCAC GACTAAGAGACAAGAGTACTCAAGTCAAATACTCAGGGACCTCTCTCATCAGAGT Dog_canine_distemper AGCAC 3925 Ferret, GACTAAGAGACAAGAGTACTCAAGTCAAATACTCAGGGACCTCTCTCATCAGAGT AGCAC 3925 Porcine GGCTGAGGGATAAGAGCACCCAAGTCAAGTACTCCGGGACATCATTGATTCGAGT 3925 GGCAA GGTTGCGAGACAAAAGTACCCAGGTTAAGTACTCTGGTACATCACTGATTAGAGT Phyllostomus CGCTA 3925

*

Hendra CGACA 4315 Nipah AGATA 4315 Niniventer GGACA 4024 Berylmys TGACA 3988 Gierle GGATA 4012 Feline CGATA 4055 Dolphin 3985 GGATA Saiga_antelope, GGATA 3985 Goitered_gazelle, GGATA 3985 Domestic sheep, GGATA 3985 Wild_goat, GGATA 3985 Bharal, 3985 GGATA Domestic_goat, GGATA 3985 Measles TGATA 4007 Rinderpest AGATA 3985 Phocine_distemper_north_sea GGACA 4007 Phocine_distemper_caspian_sea, 3985 GGACA Dog_canine_distemper GGACA 3985 Ferret, 3985 GGACA Porcine 3985 AGACA Phyllostomus TGACA 3985 ** * Hendra ATTTC 4375 Nipah ATTCA 4375 Niniventer ATTTA 4084 Berylmys ATTCA 4048 Gierle ATATC 4072 Feline ATTCA 4115 Dolphin TTTCA 4045 Saiga_antelope, CTTTA 4045 Goitered_gazelle,

4045

4045

Domestic_sheep,

CTTTA

CTTTA

Wild_goat,

GATATGTCAACATAAGTAATGATAATTTAGACTTCAGAGTGGAAGGTGAAAAGGT GATATGTTAACATAAGCAATGACAATCTAGATTTCAGAATTGAGGGAGAAAAGGT GATATGTTAATATAAGTAATGATCAACTGAGTTTCTGTTTAGACGGGAGACGAGT GGTATGTTAGCATTAGTAATGATCATCTGTCTTTCACAATTGAGGGGAAAAGAGT GGTATGTCAGCATCAGTAATGACCATCTGTCATTCCTAATAGATGGGAAAAAGGT GCTATACAACAATATCTAATGATAATATGTCGTTCATTATTAATAACAAAAAAGT GGTATACAACAATATCGAATGATAACTTATCATTCATTATAGCAGATAAGAAGGT GATACACAACCATCTCCAATGATAACTTGTCGTTTGTGATATCTGAGAAAAAAGT GATACACAACCATCTCCAATGATAACTTGTCGTTTGTGATATCTGAGAAAAAAGT GATACACAACCATCTCCAATGATAACCTGTCATTTGTGATATCTGAGAAAAAAGT GATACACAACCATCTCCAATGATAACCTGTCATTTGTGATATCTGAGAAAAAAGT GATACACAACCATCTCCAATGATAACTTGTCATTTGTGATATCTGAGAAAAAAGT GATACACAACCATCTCCAATGATAACTTGTCATTTGTGATATCTGAGAAAAAAGT GGTATACCACAATCTCCAACGACAATCTCTCATTTGTCATATCAGATAAGAAGGT GGTATACAACAATATCAAATGATAACCTATCCTTTGTCATCTCGGATAAGAAGT GTTATACAACTATCTCGAATGATAATCTCTCATTTGTAATTGCTGACAAAAAAGT GTTATGCAACTATCTCGAATGATAATCTTTCTTTTATTATAGATGACAAGAAGT GTTATGCAACTATCTCGAATGATAATCTTTCTTTTATTATAGATGACAAGAAAGT GTTATGCAACTATCTCGAATGATAATCTTTCTTTTATTATAGATGACAAGAAGT GGTATACTACCATTTCTAATGATAATCTCTCTTTCACGATTGCTGAGAAAAAAGT GGTACACAACCAACCTATCTCAACGATAATCTTTCCTTCACTATTGCCGATAAGAAAGT * *

CCAATCTAATATACCAACAAACAATGCTACTCGGCTTGTCAGTATTGGAAGGTAA
CGAATCTTATTTATCAACAAGCAATGCTATTAGGGTTATCGGTATTGGAAGGTAA
CCAACTTTATATATACAACAATGTATGTTACTCGGGTTATCAATCCTCGAGGAGCA
CAAATTTTATATATCAACAATGCATGTTATTGGGGCTTGCCATTCTTGAGCAAAA
CAAATTTTATTTATCAGCAATGTATGTTGTTAGGACTAGCCATTCTAGAACAACT
CTAATTTTGTCTACCAGCAAGGAATGTTATTAGGTTTGAGTATATTAGAATATAT
CAAATTTCATTTATCAGCAAGGAATGTTGTTGGGATTCGGGATCCTAGAAACATA
CCAACTTCATTTATCAGCAAGGGATGTTGCTTGGGTCTTGGGATCCTTGAGAACCT
CCAACTTCATTTATCAGCAAGGGATGTTGCTTGGTCTTGGGATCCTTGAGAACCT
CCAACTTCATTTATCAGCAAGGGATGCTGCTCGGTCTTGGGATCCTTGAGAACCT
CCAACTTCATTTATCAGCAAGGGATGCTGCTCGGTCTTGGGATCCTTGAGAACCT

GTTTC 4067 Rinderpest GTTTA Phocine_distemper_north_sea 4067 Phocine_distemper_caspian_sea, ATTTA 4045 Dog_canine_distemper ATTTA 4045 Ferret, ATTTA 4045 Porcine ATTTC 4045 Phvllostomus CTTCA 4045 Hendra TAATT 4435 Nipah TAATT 4435 Niniventer TAATT 4144 Berylmys CAATT 4108 Gierle TCATT 4132 Feline TAATT 4175 Dolphin AGAAT 4105 Saiga_antelope, AGAAT 4105 Goitered_gazelle, AGAAT 4105 Domestic_sheep, AGAAT 4105 Wild_goat, AGAAT 4105 Bharal, AGAAT 4105 Domestic_goat, AGAAT 4105 Measles AGATT 4127 Rinderpest AGATT 4105 Phocine_distemper_north_sea AGACT 4127 Phocine_distemper_caspian_sea, AGATT 4105 Dog_canine_distemper AGATT 4105 Ferret. AGATT 4105 Porcine TGAGT 4105 Phyllostomus

CTTTA

CTTTA

CTTTA

CGAAT

4105

Measles

Bharal,

4045

4045

4045

Domestic_goat,

CCAACTTCATTTATCAGCAAGGGATGTTGCTTGGTCTTGGGATCCTTGAGAACCT
CCAACTTCATTTATCAGCAAGGGATGCTGCTCGGTCTTGGGATCCTTGAGAACCT
CTAACTTTATATACCAACAAGGAATGCTTCTAGGGTTGGGTGTTTTAGAAACATT
CAAACTTCATCTATCAGCAGGGGATGTTACTAGGTTTGGGTGTCCTCGAGACATT
CAAATTTCATCTATCAGCAAGGTATGCTCTTGGGTCTTGGCATCTTAGAACATCA
CAAATTTTATTTATCAACAAGGTATGCTCCTGGGCCTGGGGATCCTTGAGCACTT
CAAATTTTATTTATCAACAAGGTATGCTCCTGGGCCTGGGGATCCTTGAGCACTT
CAAATTTTATTTATCAACAAGGTATGCTCCTGGGCCTGGGGATCCTTGAGCACTT
CCAACTTTATATATCAACAAGGTATGCTCCTGGGCCTGGGGATCCTTGAGCACCT
CCAACTTTATATATCAACAAGGGATGCTTCTCGGCTTAGGGATCCTCGAGCACCT
CCCAATTTCATATATCAGCAGGGAATGCTGTTAGGGCTAGGGGTGTTGGAACAACT

GGTTGAGAACAGAACAGATGATTATAACGGAATATATCATCTGCATGTCAGAGA GATTGAGATTAGAAACTGATGATTACAACGGGATATATCACTTACACGTAAAGGA GAAATGTATCCACAACAGGTCTTCTCAATACTGTTCTTCATCTTCATGCAGATGT GATGCAAAGCTACCACTGGGTTAGGTAATCTCATTTTACATCTTCATGCAGACAC GGCGGTGGAGCACTACAGGGGTTAACAATCTTATACTCCATCTCCATGCCGATGT GATACTGTACAAGTACTGGACAGTCAAACACTGTAATTCACTTACATGCAGATGT GGTTACAGACAAATACGGGGTCCTCTAATACAGTGTTACATCTACATGTTGAAGC GGCTAGAGGCCACCACCGGAGTATCCAACACAGTGCTACACCTGCACGTGGAAAC GGCTAGAGGCCACCACCGGAGTATCCAACACAGTGCTACACCTGCACGTGGAAAC GGCTAGAGGCCACCACCGGAGTATCCAACACAGTGCTACACCTGCACGTGGAAAC GGCTAGAGGCCACCAGGGAGTATCTAACACAGTGCTACACCTGCACGTGGAAAC GGCTAGAGGCCACCAGGAGTATCCAACACAGTGCTACACCTGCACGTGGAAAC GGCTAGAGGCCACCAGGAGTATCCAATACAGTGCTACACCTGCACGTGGAAAC GACTCGAGAAAGATACTGGATCATCTAACACGGTATTACATCTTCACGTCGAAAC GGCTTGATAAAGACACAGGACCCTCAAACACTGTACTGCACCTCCATGTAGAAAC GATTGTCCTCAAATACCGGTGAATCTAACACTGTACTGCATCTGCACGTTGAAAC GATTGTCTTCAACCACCGGCGACTCTAACACCGTATTACATTTACATGTTGAAAC GATTGTCTTCAACCACCGGCGACTCTAACACCGTGTTACATTTACATGTTGAAAC GATTGTCTTCAACCACCGGCGACTCTAACACCGTGTTACATTTACATGTTGAAAC GCCTGGTTGATAACACAGGGCCTGCAAACACAGTCCTCCATTTACATGTAGAGAC GATTGGCCACAAATACAGGACAAGCAAATACTGTTCTTCACTTGCACGTTGAAAC

Hendra AGAAT 4495 Nipah AGAAT 4495 Niniventer AGAAA 4204 Berylmys TGTAA 4168 Gierle ACAAA 4192 Feline ACCTG 4235 Dolphin TAGCG 4165 Saiga_antelope, AGTTA 4165 Goitered_gazelle, AGTTA 4165 Domestic_sheep, AGTTA 4165 Wild_goat, AGTTA 4165 Bharal, AGTTA 4165 Domestic_goat, AGTTA 4165 Measles GCTGA 4187 Rinderpest GTTCA 4165 Phocine_distemper_north_sea TGTAC 4187 Phocine_distemper_caspian_sea, CATAC 4165 Dog_canine_distemper CATAC 4165 Ferret, CATAC 4165 Porcine GCAGT 4165 Phyllostomus GAAAC 4165

GTTGTGTCAAGGAGGTTGCTGATATTGGTGGTGTTAATGCTGAGCTACCTGTCCC GTTGTGTCAAAGAAGTGGCTGATGTAGGCCAAGTAGACGCTGAGTTGCCTATCCC GTTGTATTACTCCTATGGAAGATCAACCTTACATCAAGAGCCTTCGTTCAATTCC GCTGTATCATTCGAATGGAAGATCAACCATTTATACGGGCATGTAGACCTCTTCC GCTGCATAAACCAGATGGAGGACCAGCCATTTATTAGAGCCATTATCGATCTGCC GTTGTATAGTACAGATGACTGATCAGCCTTATACACCAAGCTTAACAAAAAAGCT GCTGTGTAATCCCTATGACTGACCATCCCAGAGTCCCAAGTCACCGTACTGCACC GTTGTGTTGTACCTATGGTGGATCACCCAAGGATACCGAGTCTCCGTAATATAAA GTTGTGTTGTACCTATGGTGGATCACCCAAGGATACCGAGTCTCCGTAATATAAA GTTGTGTTGTACCTATGGTGGATCACCCAAGGATACCGAGTCTCCGTAATATAAA GTTGTGTTGTACCTATGGTGGATCACCCAAGGATCCCGAGTCTCCGTAATATAAA GTTGTGTTGTACCTATGGTGGATCACCCAAGGATACCGAGTCTCCGTAATATAAA GTTGTGTTGTACCTATGGTGGATCACCCAAGGATACCGAGTCTCCGTAATATAAA GTTGCGTGATCCCGATGATAGATCATCCCAGGATACCCAGCTCCCGCAAGCTAGA GCTGCGTGATCCCTATGGTAGATCACCCGAGGATCCCAAGCTTGCATGAATTGAA GTTGTGTGATCCCCATGACTGATCATCCACGAGTCCTAGCCCTTAGACAGGTTGT GTTGCGTAATACCCATGAGCGACCATCCAAGAGTCCCAGGGCTCAGAAATGTCGT GTTGCGTAATACCCATGAGTGACCATCCAAGAGTCCCAGGGCTCAGAAAGGTCGT GTTGCGTAATACCCATGAGTGACCATCCAAGAGTCCCAGGGCTCAGAAAGGTCGT GCTGTGTCATCCCCATGACCGACTATCCGAGTGTACCAAGTCTCCGCCAACTTCG GTTGTGTAATCCCTATGACTGATCACCCGACTGTCCCTAGTATCCACCAAATGAG

Hendra TGATT 4555 Nipah AGATT 4555 Niniventer AGAAG 4264 Berylmys AGATC 4228 Gierle 4252 GGACT Feline CGATG 4295 Dolphin 4225 **GGATG** Saiga_antelope, 4225 CGATG Goitered_gazelle, CGATG 4225 Domestic_sheep, CGATG 4225 Wild_goat, CGATG 4225

ACACTGAAGTAGAAAATAATAGGCTCATATATGACCCAGATCCTGTTTCTGAAAT
ATACTGAAGTGGATAACAATCATCTTATATATGATCCAGACCCCGTTTCAGAAAT
CTAAGAGAATTATTAATAACAGATTAATCTATGATCCTAACCCAATAATAGAAAA
TTAGAGTATGTGCCAATAATAGATTGATTTATGATAGTAACCCTGTGATAGAGCG
TCCAGACATGCCCGTCAAATCGTCTAATTTATGACCACAATCCTGTCATCGACAA
ATATTAGGCCCATTAATAATAAACTGATATATGATCCGGCTCCTATAATCGATAC
CCAGGAAAATGTGCACCAATCCATTGATCTACGATAATTCTCCAATCATTGAGAA
CGGATGAGCTATGCACAAACCCTTTGATCTACGACAGGTCCCCCATCATAGAGCA
CGGATGAGCTATGCACAAACCCTTTGATCTACGACAGGTCCCCCATCATAGAGCA
CGGATGAGCTATGCACAAACCCTTTGATCTACGACAGGTCCCCCATCATAGAGCA
CGGATGAGCTATGCACAAACCCTTTGATCTACGACAGGTCTCCCATCATAGAGCA

Bharal, CGGATGAGCTATGCACAAACCCTTTGATCTACGACAGGTCTCCCATCATAGAGCA 4225 CGATG CGGATGAGCTATGCACAAACCCTTTGATCTACGACAGGTCTCCCATCATAGAGCA Domestic_goat, CGATG 4225 GGGCAGAGCTATGTACCAACCCATTGATATGTAATGCACCTTTAATTGACAG Measles AGATG 4247 Rinderpest GAAGGGAGCTATGTACCAACCCACTGATTTATGATAGTGCACCCATCATCGACAG GGAAG 4225 Phocine_distemper_north_sea CAAGGAATATCTGCACAAATCCCTTGATTTATGATAGTAACCCTATTATAGAGAA AGATG Phocine_distemper_caspian_sea, CAAGAAATATCTGTACAAATCCTTTGATTTATGACAGTAACCCTATTATTGAGAA AGATG 4225 Dog canine distemper CAAGAAATATTTGTACAAATCCTTTGATTTATGACAGTAACCCTATTATTGAGAA 4225 AGATG Ferret, CAAGAAATGTTTGTACAAATCCTTTGATTTATGACAGTAACCCTATTATTGAGAA AGATG 4225 CCCAAACAGTTTGTACAAACCCTCTGATCTATGATAAGACCCCTATAATTGAAAA Porcine GGATG 4225 Phyllostomus CTCATACCATATGTACGAATCCCCTTATTTATGATAACAACCCTATTATTGAAAA GGATG 4225 * ** ** ** Hendra GTGATCGCTTATCAAAGCAAGAGTCTAAGGCGAGAGAATTAGACTTTCCTCTTTG GTCCA 4615 GCAGCCGTCTTTCTAATCAGGAGTCCAAATCAAGAGAATTAGACTTTCCTTTATG Nipah GTCAA 4615 CAGCAAGGTTATCTATGCAGTCACATATGAAAGGCCTTGTTGATTTTGTATCCTG Niniventer GGATA 4324 AAATTAAGCTTGGTTTTCAAGACCACTTAAAACCATTACTTGATTTTGTGACTTG Berylmys 4288 GGACA Gierle TGATCAGGCTAGGATTTCAAGACCATCTTAGACCAATCCTAGACTTTGTGACCTG GGAAA 4312 CAGCTAGGCTATATTCCCAAAAATACCTGTCACATTTAATAGATTTCCCAAGTTG Feline 4355 GTCAA Dolphin CGGTACGTCTATATTCCCAGAGCCATAGAAAGCACCTCGTGGAGTTTGTTACTTG GTCAA 4285 Saiga_antelope, CAACCCGGCTATATTCACAGAGCCACAGGAGACATTTGGTGGAGTTTGTTACCTG GTCAA 4285 Goitered_gazelle, CAACCCGGCTATATTCACAGAGCCACAGGAGACATTTGGTGGAGTTTGTTACCTG GTCAA 4285 Domestic_sheep, CAACCCGACTATACTCACAGAGCCACAGGAGACATCTGGTGGAGTTTGTTACCTG GTCAA 4285 Wild_goat, CAACCCGACTGTACTCACAGAGCCACAGGAGACATCTGGTGGAGTTTGTTACCTG GTCAA 4285 Bharal, CAACCCGACTATACTCACAGAGCCACAGGAGACATTTGGTGGAGTTTGTTACCTG GTCCA 4285 Domestic_qoat, CAACCCGACTATACTCACAGAGCCACAGGAGACATTTGGTGGAGTTTGTTACCTG GTCAA 4285 Measles CAACAAGGCTATACACCCAGAGCCATAGGAGGCACCTTGTGGAATTTGTTACATG GTCCA 4307 CAACAAAACTCTATACCCAAAGTCATCGGAGACATCTCGTGGAATTTGTGACATG Rinderpest GTCTA 4285 Phocine_distemper_north_sea CAATAAGGCTTTATAATCAAAGTCATCGGAAGCATATTGTAGAGTTTGTTACCTG 4307 GACAA Phocine_distemper_caspian_sea, CAGTCAGACTTTATAACCAGAGTCACAGAAAGCACATTGTAGAGTTTGTCACATG 4285 GACAA Dog_canine_distemper CAGTCAGACTTTATAACCAGAGTCACAGAAAGCACATTGTAGAGTTTGTCACATG GACAA 4285

51

* ** ** ** **

Ferret, GACAA

Porcine

Phyllostomus

GTCCA 4285

GTCCA

4285

4285

CAGTCAGACTTTATAACCAGAGTCACAGAAAGCACATTGTAGAGTTTGTCACATG

CAATCAGGATTTACAATCAACACCACCGGCGCCAGGTTGTAGAGTTTGTTACATG

CTATAAGGATCTACCACCAGCACTATAGACGCCAAATTGTAGAGTTTGTAACGTG

Hendra CATAA 4675 Nipah 4675 TATAA Niniventer GATCA 4384 Berylmys TATAA 4348 Gierle 4372 TATCA Feline AATTA 4415 Dolphin GGTTA 4345 Saiga_antelope, GATTA 4345 Goitered_gazelle, GATTA 4345 Domestic_sheep, GATCA 4345 Wild_goat, GATCA 4345 Bharal, GATCA 4345 Domestic_goat, GATCA 4345 Measles GGTAA 4367 Rinderpest 4345 AGTGA Phocine_distemper_north_sea GATTA 4367 Phocine_distemper_caspian_sea, GATTA 4345 Dog_canine_distemper GATTA 4345 Ferret, GATTA 4345 Porcine CGTAA 4345 Phyllostomus GATCA 4345

* *

Bharal,

Hendra TATCA 4735 Nipah CATCA 4735 Niniventer TACTA 4444 Berylmys 4408 TATCA Gierle 4432 TATAA Feline TATCA 4475 Dolphin TATCA 4405 Saiga_antelope, CATCA 4405 Goitered_gazelle, CATCA 4405 Domestic_sheep, CATCA 4405 Wild_goat, CATCA 4405

CCGAAGAACTCCATGATGTTTAGCTAAGACTGTGGCTCAAACAGTTCTCGAGAT CTGAGGAACTTCATGATGTCCTAGCTAAGACTGTTGCTCAGACCGTTCTTGAGAT CACGAATATTATCATGCATTATCCAACTCTACAGCTGCAACTTTAATAGAGAT CGAACCAATTATATCATGCTTTATCTAAATCAACCGCTTCCACTCTCATCGAAAT CAACTGCACTTTATCACGCACTATCCAAGTCTACTGCAGCAACATTGATCGAGAT $\tt CTACTCAGCTTAACACAGTGTTGGCGAAAGTGGTGGCGGTATCCATTGTAGAATT$ CGGGGCAGCTGTATCACGTACTAGCGAAATCAACTGCTATGTCAATGATCGAATT CAAGCCAGCTTTACCATATACTGGCTAAGTCTACAGCAATGTCCATGATTGAATT CAAGCCAGCTTTACCATATACTGGCTAAGTCTACAGCAATGTCCATGATTGAATT CAAGCCAGCTTTACCATATACTGGCTAAGTCTACAGCAATGTCCATGATTGAGTT CAAGCCAGCTTTACCATATACTGGCTAAGTCTACAGCTATGTCCATGATTGAGTT CAAGCCAGCTTTACCATATACTGGCTAAGTCTACAGCAATGTCCATGATTGAATT CAAGCCAGCTTTACCATATACTGGCTAAGTCTACAGCAATGTCCATGATTGAGTT CATCTCAGTTGTACCACATCTTGGCAAAATCAACTGCATTGTCGATGATAGACTT CAGGGCAACTCTATCATGTGCTCGCTAAGTCGACCGCTATGTCTATGGTCGAAAT CAGGGCAGCTTTATCATGTGCTAGCTAAGTCTACTGCTATGTCTATGGTTGAGAT CAGGGCAGCTTTATCATGTGCTAGCTAAATCTACTGCTATGTCTATGGTTGAGAT CAGGGCAGCTTTATCATGTGCTAGCTAAATCTACTGCTATGTCTATGGTTGAGAT CAAATCAGCTGTATCACGTGTTAGCCAAATCTACTGCCATGTCTATGATTGAACT CAAGTCAACTGTATCACGTACTCGCCAAATCAACCGCGATGTCCATGATTGAGTT

CTAAAGCCGATAAAGATGTCCTCAAGCAACACTTAGCTATAGACTCAGATGACAG
CAAAGGCTGACAAGGATGTTTTAAAGCAACACCTTGCAATAGACTCTGACGATAA
CAAAATTAGACAAGGATCATTTAAGTGAGATTAAGGCTATAACATCAGATGATGA
CTAAAACAGAGAAAGATCATCTCAATGAAATAAAGGCTATAACAGCTGATGACGA
CCAAACTTGAGAAAGATCACCTGAATGAGATCAAAACTATCACTGCAGATGATGA
CAAAAGCTAGTAAAGACCATCTCAATGAGATAATAGCAGTTGTTGGTGATGATGA
CCAAATTTGAGAAAGATCATCTGAACGAAATAGCTGCTTTAATAGGAGACGATGA
CGAGATTCGAGAAAGATCACATGAATGAAATAGCCGCCCTGATTGGCGATGACGA
CGAGATTCGAGAAAGATCACATGAATGAAATAGCCGCCCTGATTGGCGATGACGA
CGAGATTCGAGAAAGATCACATGAATGAAATAGCCGCCCTGATTGGCGATGACGA
CGAGATTCGAGAAAGATCACATGAATGAAATAGCCGCCCTGATTGGCGATGACGA
CGAGATTCGAGAAAGATCACATGAATGAAATAGCCGCCCTGATTGGCGATGACGA
CGAGATTCGAGAAAGATCACATGAATGAAATAGCCGCCCTGATTGGCGATGACGA

CATCA 4405 Domestic_goat, CATCA 4405 Measles TATCA 4427 Rinderpest TATCA 4405 Phocine_distemper_north_sea Phocine_distemper_caspian_sea, TATCA 4405 Dog_canine_distemper TATCA 4405 Ferret, TATCA 4405 Porcine TATCA 4405 Phvllostomus CATTA 4405

* *

Hendra AGGTC 4795 Nipah AGGAC 4795 Niniventer TGGAC 4504 Berylmys TGGGC 4468 Gierle CGGCC 4492 Feline 4535 AGGCC Dolphin AGGCC 4465 Saiga_antelope, TGGTC 4465 Goitered_gazelle, TGGTC 4465 Domestic_sheep, TGGTC 4465 Wild_goat, TGGTC 4465 Bharal, TGGTC 4465 Domestic_qoat, TGGTC 4465 Measles GGGCC 4487 Rinderpest AGGTC 4465 Phocine_distemper_north_sea AGGTC 4487 Phocine_distemper_caspian_sea, **AGGCC** 4465 Dog_canine_distemper AGGTC 4465

ACAGCTTAATCACAGAATTTCTAATAGTTGATCCTGAACTGTTTGCACTTTATCT ATAGTCTGATATCAGAGATGTTATTGGTAAATCCCAAGTTATTCCAAGTTTATCT ATAGCATGATCACAGAAATGCTACTAGTAAGGCCAAAGTTGTTTTCAATTTACCT ATAGCTTTATTACAGAATTTCTACTTGTTGATCCACGTCTGTTTACACTATATTT ATAGTTTCATCACTGAATTCCTTCTAGTAGAGCCTAGACTATTTACAGTATACTT ACACCTTCATCACACAATTTTTTCCTAGTAGAGCCCTAGATTATTTTATAGTTTACCTTACAGCTTCATCACAGAATTTTTGCTAGTGGAGCCTAGATTACTTATAGTTTACCT ATAGTTTCATAACTGAGTTTCTGCTTATAGAGCCAAGATTATTCACCATCTACTT ACAGTTTTATAACAGAGTTCCTCCTTGTAGAGCCTAGACTGTTTACCGTCTACTT ACAGTTTTATCACTGAATTTCTCTTGGTTGAACCTAGATTATTCACCGTGTATCT ATAGTTTTATCACTGAGTTTCTTCTAGTTGAGCCTAGATTATTTACTGTATATCT ATAGTTTTATCACTGAGTTTCTTCTAGTTGAGCCTAGATTATTTACTGTATATCT ATAGTTTTATCACTGAGTTTCTTCTAGTTGAGCCTAGATTATTTACTGTATATCT ATAGCTTTATAACTGAGTTCCTGCTTGTCGAGCCTAGATTATTCGTTGTTTATTT ACAGCTTTATAACTGAATTTCTGCTTGTGGAACCTAGGCTTTTTACTGTTTATCT

** *

GGGTC

Ferret,

Porcine AGGCC

Phyllostomus

AGGTC

4465

4465

4465

* **

ACATA 4855 Nipah ACATA 4855 Niniventer GTATG 4564 Berylmys GTATG 4528 Gierle 4552 GTATG Feline ATACC 4595 Dolphin **GTACC** 4525 Saiga_antelope, GTACC 4525 Goitered_gazelle, GTACC 4525 Domestic_sheep, GCACC 4525 Wild_goat, GCACC 4525 Bharal, GTACC 4525 Domestic_qoat, GTACC 4525 Measles ATATC 4547 Rinderpest ATATC 4525 Phocine_distemper_north_sea ATATC 4547 Phocine_distemper_caspian_sea, GTACC 4525 Dog canine distemper GTACC 4525 Ferret, GTACC 4525 Porcine ATATC 4525 Phyllostomus ATATC 4525 Hendra AGTCT 4915 Nipah AGTGT 4915 Niniventer AGTGT 4624 Berylmys 4588 AGTTA

Gierle AGTAT 4612 Feline CATAT 4655 Dolphin AATCC 4585 Saiga_antelope, GATCT Goitered_gazelle, 4585 GATCT Domestic_sheep, 4585 GATCT Wild_goat, GATCT 4585 Bharal, GATCT 4585

AATCTATATCAATAAAATGGGCCTTTGAAATTCATCATAGGCGTCCTAGAGGAAG AACAAGCTTGCATTAATTGGGCATATGAGATTCACTTTAGAAGACCAAAGGGGAA AGGCCATAGCCATTAACTGGGCATATGAAATTAATTACCGTAGACCTAAAGGGAA AGTCTATTGCAATTAATTGGTCATTTGAAATCCATTACAGACGACCAAGAGGAAA AATACACATCATTACAATGGGCATATGAAGTCCATTATCATAGACCAGTGGGTAA AATGTGCAGCTATTAATTGGGCTTTCGAGATACATTATCACCGTCCTTCAGGCAA AGTGTGCTGCCATCAATTGGGCCTTTGATATACATTATCATCGGCCCTCGGGCAA AGTGTGCTGCCATCAATTGGGCCTTTGATATACATTATCATCGGCCCTCGGGCAA AGTGTGCTGCCATCAATTGGGCCTTTGATATACATTATCATCGGCCCTCGGGCAA AGTGTGCCATCAATTGGGCCTTCGATATACATTATCATCGGCCCTCAGGCAA AGTGTGCCATCAATTGGGCCTTTGATATACATTATCATCGGCCCTCGGGCAA AGTGTGCTGCCATCAATTGGGCCTTTGATATACATTATCATCGGCCCTCGGGCAA AGTGTGCAGCCATCAATTGGGCATTTGATGTACATTATCATAGACCATCAGGGAA AGTGTACAGCTATAAATTGGGCATTTGACATTCATTACCATCGACCTTCAGGGAA AATGTGCAGCAATTAACTGGGGTTTTGAAATCCATTACCATCGACCTTCAGGTAA AATGTGCTGCAATCAACTGGGGCTTTGAAATTCATTATCACCGACCTTCTGGAAA AATGTGCTGCAATCAACTGGGGCTTTGAAATTCATTATCACCGACCTTCTGGAAA AATGTGCTGCAATCAACTGGGGCTTTGAAATTCATTATCACCGACCTTCTGGAAA AGTGTGCAGCCCTTAATTGGGCCTTTGAGATCCACTTCCACCGCCCGATGGGTAA AATGTGCAGCACTCAATTGGGCATTCGAAATCCACTTCCATCGTCCGACGGGAAA

4585

GATCT

Hendra CCTCT

5035

AGATGGGGGAACTCCTCTACTCTCTCTCTCTCTCGGATGAGCAAAGGAGTATATAA

TTCCCACTCAGGGTCCTTATCTTCACCAACAAGATTTTGAGAAATTATCTCAGAA

```
Measles
                                    AGATGGGTGAGCTGTTGTCTTCGTTCCTTTCTAGAATGAGCAAAGGAGTGTTTAA
GGTGC
       4607
                                    AGATGGGGGAACTCCTGACCTCATTCCTTGCAAGGATGAGTAAGAGCGTATTCAA
Rinderpest
GGTCT
       4585
Phocine_distemper_north_sea
                                    AAATGGGGGAATTGTTGTTTTCATTTCTCAGCAGAATGAGTAAAGGTGTCTTCAA
AATCT
Phocine_distemper_caspian_sea,
                                    AAATGGGTGAGTTGTTCTCTTTCCTGAGTAGAATGAGTAAAGGAGTCTTCAA
       4585
Dog_canine_distemper
                                    AAATGGGTGAGTTGTTCTCTTTCCTGAGTAGAATGAGTAAAGGAGTCTTCAA
AATTT
       4585
Ferret,
                                    AAATGGGTGAGTTGTTCTCTTTCCTGAGTAGAATGAGTAAAGGAGTCTTCAA
AATTT
       4585
                                    AAATGGGTGAATTATTGTTCACCTTTCTAACTAGGATGAGCAAAGGGGTATTCAA
Porcine
GATTC
       4585
                                    AAATGGGTGAGCTCCTATTTACTTTCTTAAGTCGAATGAGCAAAGGAGTATTCAA
Phvllostomus
GATAT
       4585
Hendra
                                    TGTCTAATGCACTGTCACATCCCAGAGTGTTCAAGAGGTTTGTGAATTGCGGCTT
GCTTC
        4975
Nipah
                                    TGTCAAATGCCTTGTCACATCCTAGAGTATTCAAGAGATTTGTAAACTGTGGCTT
GCTAT
        4975
                                    TCACAAATGCTCTTTCACATCCTAAAGTATATCAACGGTTTTGGGAAGCAGGTGT
Niniventer
CGTGG 4684
                                    {\tt TTTGCAATGCATTATCACATGATAAGGTCTACCGTCGGTTATGGAATGCTGGACT}
Berylmys
GGTTG
       4648
Gierle
                                    TGTGTAATGCTTTGTCCCACGAAGAGTTTACAGAAGATTGTGGAATGCCGGGTT
AGTTG
        4672
Feline
                                    TGACCAATGCCTTTAGCCACCCCAGAGTCTACAAAAGATTCTGGGAGTGTGGTTT
ATTGG
       4715
Dolphin
                                    TTACTAATGCTTTGAGTCATCCTAAAGTCTACAGGAGATTTTGGGACTGTGGAAT
AATTG
       4645
Saiga_antelope,
                                    TTACTAATGCTTTGAGCCACCCCAAAGTTTACAAGAAATTTTGGCGAAGTGGCAT
CATTG
       4645
Goitered_gazelle,
                                    TTACTAATGCTTTGAGCCACCCCAAAGTTTACAAGAAATTTTGGCGAAGTGGCAT
CATTG
       4645
Domestic_sheep,
                                    TCACCAATGCTTTGAGCCACCCCAAAGTTTACAAGAAATTCTGGCGAAGTGGTGT
CATTG
       4645
Wild_goat,
                                    TCACCAATGCTTTGAGCCACCCCAAAGTTTACAAGAATTCTGGCGAAGTGGTGT
CATTG
       4645
Bharal,
                                    TCACCAATGCTTTGAGCCACCCCAAAGTTTACAAGAAATTTTGGCGAAGTGGTGT
CATTG
       4645
Domestic goat,
                                    TCACCAATGCTTTGAGCCACCCCAAAGTTTACAAGAAATTTTGGCGAAGTGGTGT
CATTG
       4645
Measles
                                    TTGTCAATGCTCTAAGCCACCCAAAGATCTACAAGAAATTCTGGCATTGTGGTAT
TATAG
       4667
Rinderpest
                                    TTGTGAATGCACTGAGCCACCCCAAGATTTACAGGAAGTTCTGGCATAGTGGGAT
TATAG
       4645
                                    TAACCAACGCTCTAAGCCATCCTAAAGTATATAGGAGATTTTGGGACAGCGGAAT
Phocine_distemper_north_sea
GATTG
        4667
Phocine_distemper_caspian_sea,
                                    TAACCAATGCATTGAGCCATCCTAAAGTATATAGACGGTTTTGGGACAGTGGGAT
GATTG
        4645
Dog_canine_distemper
                                    TAGCCAATGCATTGAGCCATCCTAAAGTATATAGACGGTTTTTGGGACAGTGGGAT
GATTG
       4645
Ferret,
                                    TAACCAATGCATTGAGCCATCCTAAAGTATATAGACGGTTTTGGGACAGTGGGAT
GATTG
        4645
                                    TCACCAACGCATTAAGTCACCCCCGGGTTTATCGAAGATTCTGGGACAGTGGGAT
Porcine
       4645
GATTG
Phyllostomus
                                    TAGTCAATGCTTTAAGCCATCCTCGGGTTTACAGGAGATTCTGGGATAGCGGAAT
GATTG
       4645
                                         ** **
```

Nipah CCTTC 5035 Niniventer 4744 CATGA Berylmys TATGA 4708 Gierle GATGT 4732 Feline 4775 TTATA Dolphin CATGA 4705 Saiga_antelope, 4705 CATGA Goitered_gazelle, 4705 CATGA Domestic_sheep, CATGA 4705 Wild_goat, CATGA 4705 Bharal, CATGA 4705 Domestic_qoat, CATGA 4705 Measles CATGG 4727 Rinderpest 4705 TATGA Phocine_distemper_north_sea TTTGA 4727 Phocine_distemper_caspian_sea, CCTGA 4705 Dog_canine_distemper CCTGA 4705 Ferret, CCTGA 4705 Porcine CCTCA 4705 Phyllostomus CCTTA 4705

TGCCTACACAGGGTCCTTACCTTCATCAACAAGATTTTGAAAAGTTGTCTCAAAA AGCCTATACACGGTCCATCATTAGATACCCAAAACCTTGTAATAACTGTTATTGA AACCCATCCACGGCCCCTCTCTTGATACTCAAAACATGATTAATACTGTCATAGA AGCCTATTTATGGGCCCTATATAGGAAGTCAAAATCTACATAATGCAATGATTGA AGCCAATACACGGCCCCTCTCTAGATACTCAAAATTTACATCTCACGGTCTGTAA AGCCTATCCATGGTCCTTCACTTGATGCTCAAAACTTGCACACAACTGTGTGCAA AACCTATTCATGGACCCTCTCTAGACGCTCAGAATTTGCATATAACTGTCTGCAA AACCTATTCATGGACCCTCTCTTGACTCCCAAAACCTACATATAACTGTATGCAA AACCTGTTCATGGACCCTCTCTTGACTCCCAAAACCTACATATAACTGTATGCAA AACCTGTTCATGGACCCTCTCTTGACTCCCAAAACCTACATATAACTGTATGCAA AGCCAGTGTATGGACCATCATTGGATACACAAAATCTGCATCAAACTGTTTGCAA AGCCAGTATACGGGCCATCCCTAGATACACAGAATTTACACCACACAGTATGTAA

Hendra ATTCC 5089 Nipah ATCCC 5089 Niniventer TTATC 4804 Berylmys TTACC 4768 Gierle 4792 ATACA Feline 4835 TACTG Dolphin TTTCA 4765 Saiga_antelope, TTACC 4765 Goitered_gazelle, 4765 TTACC Domestic_sheep, TTACC 4765 Wild_goat, TTACC 4765 Bharal, TTACC 4765 Domestic_goat,

TTATC 4765 Measles 4787 GTTCA Rinderpest GTTCA 4765 Phocine_distemper_north_sea ATTCT 4787 Phocine_distemper_caspian_sea, TTTCT Dog canine distemper TTTCT 4765 Ferret, TTTCT 4765 Porcine TTACC 4765

Phyllostomus TTACC 4765

Hendra AACAT 5149 Nipah AACAT 5149 Niniventer TCAAA 4864 Berylmys TCAAG 4828 Gierle ACAGG 4852 Feline TCAAA 4895 Dolphin CCAAG 4825 Saiga_antelope, TCAAG 4825 Goitered_gazelle, TCAAG 4825 Domestic_sheep, TCAAG 4825 Wild_goat, TCAAG 4825 Bharal, TCAAG 4825 Domestic_qoat, TCAAG 4825 Measles CCAGG 4847

ACAGG 4825 Phocine_distemper_north_sea ACAAG 4847 Phocine_distemper_caspian_sea,

ACAAG 4825

Rinderpest

Dog_canine_distemper

4825 ACAAG Ferret, ACAAG 4825 Porcine 4825 TCAGG Phyllostomus

TCAGG 4825 TCTACAGTTGCTATATGACTTACCTTGACCTACTGTTGAATGACGAACTGGACGA TTTATAATTGTTATATGATTTACTTGGATCTTCTGCTGAACGATGAATTAGATGA TCTATAACTGTTACATGATTTACCTAGACCTTCTGTTAAATGATGAATTAGATGA TCTATAACTGTTACATGATTTACCTAGACCTTCTGTTAAATGATGAATTAGATGA TCTATAACTGTTACATGATTTACCTAGACCTTCTGTTAAATGATGAATTAGATGA TCTATAACTGCTATGTCACTTACTTAGACCTTCTTCTCAATGATGATATCGATAA TCTACAATTGTTACATCACTTATCTGGATCTCATATTGAATAATGATACAGATGA

CTTTTTGATAGCTGAACAAGATGAAGCAGTCGTAGAATTAAGGGAAGATATAAT CCTTTTTAATCGCCGAACAGGATGAAACTGTGATAAGTCTACGAGAGGATATAAT CCTATCTTATTTGTGAGAGTGATCTGGGAATCCTCAATGAGAGAGTAGACAATGC ATATTATAATATGTGAAACAGAGGAGACATGTTTGGCGAATCGAATTGACAATTA CTTTCCTATTGTGCGAGAGTGATGAAGATGTAGTCAGTGACCGGTTTGAGAATAT CATTTCTTTTGTGTGAAAGCGATGAGGATGTAGTACCGGACAGATTCGACAACAT CATACCTCCTCTGCGAAAGTGATGAGGACATAGTGGCTGACCGCTTTGATAACAT CCTTTATTTTGTGTGAAAGTGATGAAGATGTTATTCCTGAAAGATTTGATAATAT CATTCATTTTATGCGAAAGTGACGAGGATGTCATACCTGAAAGATTTGACAACAT CATTCATTTTATGCGAAAGTGACGAGGATGTCATACCTGAAAGATTTGACAACAT CATTCATTTTATGCGAAAGTGACGAGGATGTCATACCTGAAAGATTTGACAACAT CTGTTGTTTTATGTGAAAGTGATGAGGAGGTGGTGTCAGATCGATTTGATAACAT CCACTATACTCTGTGAGAGCGATGAAGATGTTGTCTCTGATAGGTTTGACAACAT

> ** ** ** *

Hendra GATAA 5209 Nipah

CAAAACACCTGTGTATGATAATTGATCTGTACGCAAATCACCATAAGCCACCTTG CCAAACATCTCTGTGTTATAATTGACTTATATGCAAATCACCATAAACCTCCTTG

GATAA 5209 Niniventer TATTA 4924 Berylmys AATAA 4888 Gierle GATAA 4912 Feline 4955 TATAA Dolphin AATAA 4885 Saiga_antelope, AATAA 4885 Goitered_gazelle, AATAA 4885 Domestic_sheep, GATAA 4885 Wild_goat, GATAA 4885 Bharal, AATAA 4885 Domestic goat, GATAA 4885 Measles GATTC 4907 Rinderpest CATCA 4885 Phocine_distemper_north_sea GATTC 4907 Phocine_distemper_caspian_sea, GATTC 4885 Dog_canine_distemper GATTC 4885 Ferret, GATTC 4885 Porcine TATCA 4885 Phyllostomus TATAA 4885

**
Hendra

CCGTC 5269 Nipah TAGGC 5269 Niniventer TTCTC 4984 Berylmys AAGTA 4948 Gierle 4972 GAGTA Feline GAGGA 5015 Dolphin AGCAT 4945 Saiga_antelope, **ATCAG** 4945 Goitered_gazelle, ATCAG 4945 Domestic_sheep, 4945 ATCAG Wild_goat, ATCAG 4945 Bharal, ATCAG 4945 Domestic_goat,

ATCAG

4945

GTAAACATTTATGTAATTTGGTTGATCTGTATTGTGACTCAAGACATACTCCAAA CAAAACACCTATGTATTATTGCCGACCTTTATTGTGATCCATCTCATATACCAGT CTAAACATCTAGCCATGCTCTCAGACCTGTACTGTGACCCCTCTCTAACTCCTCA GCAGACACTTAGCTGTGCTTATAGATCTGTATTGTGATTCCACTAGATGTCCCAA CAAGGTACCTTTGTATTCTTGCAGATCTGTACTGTAATGCAAAAAACTGCCCGTC CCAAACATCTCTGTGTATTGGCCGATGTATATTGCAGCTCCAAGAGGTGTCCTTC CCAAACATCTCTGTGTATTGGCCGATGTATATTGCAGCTCCAAGAGGTGTCCTTC CCAAACATCTCTGTGTATTGGCCGATGTATATTGCAGCTCCAAGAGGTGTCCTTC ${\tt CCAAACATCTCTGTGTACTGGCCGATGTATATTGCAGCTCCAAGAGGTGTCCTTC}$ CCAAACATCTCTGTGTATTAGCCGATGTATATTGCAGCTCCAAGAGGTGTCCTTC ${\tt CCAAACATCTCTGTGTATTGGCCGATGTATATTGCAGCTCCAAGAGGTGTCCTTC}$ CAAAACACTTGTGTGTTCTGGCAGATTTGTACTGTCAACCAGGGACCTGCCCACC CTAGACATCTGTGTGTCCTATCGGATTTATACTGCAATCCCAGAGGATGCCCGAC CCAGACACCTATGTATTCTTGCTGACCTTTATTGCAATCCCCGTAGTTGCCCACA CCAGGCACCTATGCATCTTATCTGACCTTTATTGTAACCCTCGTGATTGTCCCCA CCAGGCACCTATGCATCTTATCTGACCTTTATTGTAACCCTCGTGATTGTCCCCA CCAGGCACCTATGCATCTTATCTGACCTTTATTGTAACCCTCGTGATTGTCCCCA CTAGACACTTATGTATAATCACAGATCTTTATTGTGATACAAGAGATTGCCCACC CTAGGCATCTATGTATAATAACAGATTTGTATTGTGATACCAAAGAATGTCCGCC

* * * * * * * * * *

TTGATCTCAACCCACAAGAGAAAAATTGTGTTCTTAGGGACTTTATATCTAAGTG
TAGATCTAAACCCACAAGAAAAAAATATGTGTACTGCGTGACTTTATTTCTAAATC
GAGGGTTTCCACCATTACAGAAGTGTAAGATATTGTCGGATTTTCTTCACCATTG
GAGGTTTAACCCCCATACAAAAATGCAGAATACTTACGGATCATATCAATTTACA
GAGGTCTCACTCCTCTCATGAAGTGTAAAGTTCTACATGAGAACTTATTAATGCA
AAGGGGCAGATACAATTATGAGAAACTCAATTCTTAGATCTTTCATTGATAATGA
GGGAGCTTGCACCTATAAAGAAGTGTGCAGTACTTACACAATTCATTAAATCGGA
TCGGGATGTCTCCTATAGAAAAAATGTACCATTCTCACACATTACATCAAGGGAGA
TCGGGATGTCTCCTATAGAAAAAATGTACCATTCTCACACATTACATCAAGGGAGA
TCGGGATGTCTCCTATAGAAAAAATGTACCATTCTCACACATTACATCAAAGGAGA
TCGGGATGTCTCCTATAGAAAAAATGTACCATTCTCACACATTACATCAAAGGAGA
TCGGGATGTCTCCTATAGAAAAAATGTACCATTCTCACACATTACATCAAAGGAGA
TCGGGATGTCTCCTATAGAAAAAATGTACCATTCTCACACATTACATCAAGGGAGA

Measles GAGGTCTAAGGCCGGTAGAGAAATGTGCAGTTCTAACCGATCATATCAAGGCAGA GGCTA 4967 GGGGTCTACAACCAGTAGAGAAATGTGCCATCATGACCAAACACATCGAGGCCGA Rinderpest GGCAA 4945 GAGGATTAACACCAACACAGAAGTGTGCTGTTTTAATAAAATACCTAAAGCTGCA Phocine_distemper_north_sea AGCTC 4967 Phocine_distemper_caspian_sea, GTGGGTTGACACCAACACAGAAATGTGCTGTTTATCGGGGTACTTAAAGTCAAA AGCCC Dog_canine_distemper GTGGGTTGACACCAACACAGAAATGTGCTGTGTTGTCGGGGTACTTAAAATCAAA AGCCC 4945 Ferret, GTGGGTTGACACCAACACAGAAATGTGCTGTTGTCGGGGTACTTAAAATCAAA AGCCC 4945 Porcine GAGGTCTCTCCCCGCAGAGAAATGCAAAACACTGCTTAAATTTCTGAGGACCCA 4945 AGCAC Phyllostomus GAGGACTACCTCCCACTGAAAAATGCAAGATGTTACTTAAGTTCTTACGGGGACA GTCTC 4945 Hendra ATACTGATGTCATCTAGGTCTTGGAATATCACTGATCTGGATTTTATGGTTTT TTATG 5329 Nipah ATGTGGACACGTCCTCCAGATCATGGAATACTTCTGACCTGGATTTTGTAATATT CTATG 5329 Niniventer AATCTAGCCCTTCAGGACTTTTTTGGAACACTGCACCAATAGTTATTGATCACTA TCCAT 5044 GTCAGGCTATAAGTGGTATTTTTTGGAACACAAAACCCATAAAGATTGAACATTA Berylmys TCCTT 5008 CACTAGTGTCAGGAGGAGCCTTCTGGAATAAGGAGCCTCTTAAAGTTGAACACTA Gierle CCCGT 5032 GAACAAATCCACTCGGTTTGACATGGAACCTTGACCCGTTACTCGTGGATCATTT Feline 5075 TAGCT Dolphin TAATTTCTCCTGGGGGGTTGGATTGGAATGATGAACCGATAGTAGTAGACCACTT TTCTT 5005 Saiga_antelope, TACAATCCCCGTCTGGGACCTCATGGAACACTGATCCCCTTGTAGTAGATCATTA CTCAT 5005 TACAATCCCCGTCTGGGACCTCATGGAACACTGATCCCCTTGTAGTAGATCATTA Goitered_gazelle, CTCAT 5005 Domestic_sheep, TACAATCCCCGTCAGGGACCTCATGGAACACTGATCCCCTTGTAGTAGATCATTA CTCAT 5005 Wild_goat, TACAATCCCCGTCAGGGACCTCATGGAACACTGATCCCCTTGTAGTAGATCATTA CTCAT 5005 Bharal, TACAATCCCCGTCTGGGACCTCATGGAACACTGATCCCCTTGTAGTAGATCATTA CTCAT 5005 Domestic_goat, TACAATCCCCGTCTGGGACCTCATGGAACACTGATCCCCTTGTAGTAGATCATTA CTCAT 5005 Measles GGTTATCTCCAGCAGGATCTTCGTGGAACATAAATCCAATTATTGTAGACCATTA CTCAT 5027 Rinderpest AACTATCCCTCGCTGGCCCTTCATGGAACATAGGCCCCATTGTAATTGATCACTT CTCTT 5005 Phocine_distemper_north_sea TAGAATCTCATGTTGGCTTAACATGGAATGACAAGCCTATTTTAATTGATCAATA TTCAT 5027 Phocine_distemper_caspian_sea, TAGAATCCCATGTTGGTCTGACATGGAATGACAAACCTATCTTAATAGATCAATA 5005 TTCAT Dog_canine_distemper TAGAATCCCATGTTGGTCTGACATGGAATGACAAACCTATCTTAATAGATCAATA 5005 TTCAT Ferret, TAGAATCCCATGTTGGTCTGACATGGAATGACAAACCTATCTTAATAGATCAATA TTCAT 5005 Porcine AATTAGACCCGTCCGGTTTATCTTGGAATGATCAACCGATTTTAGTAGATCAATA TTCCT 5005 AATTAGACCCCTCAGGTTTGGCCTGGAATGATCAACCTGTTTTGGTGGACCAATA Phyllostomus CTCAT 5005

Hendra
GACAG 5389
Nipah
TACTG 5389

CTTCGTTGACTTATCTAAGAAGAGGAATAATCAAGCAGCTCAGAATTAGGCAAGT
CATCTTTGACTTATTTGAGAAGAGGTATAATAAAACAATTAAGGATAAGACAAGT

Niniventer TCCAG 5104 Berylmys TCCTG 5068 Gierle TCCAG 5092 Feline TCCAA 5135 Dolphin 5065 TCCTG Saiga_antelope, TCCTG 5065 Goitered_gazelle, TCCTG 5065 Domestic_sheep, 5065 TCCTG Wild_goat, TCCTG 5065 Bharal, TCCTG 5065 Domestic_qoat, TCCTG 5065 Measles TCCAG 5087 Rinderpest TCCAG 5065 Phocine_distemper_north_sea 5087 CCCTG Phocine_distemper_caspian_sea, TCCCG 5065 Dog_canine_distemper TCCCG 5065 Ferret, 5065 TCCCG Porcine TCCTG 5065 Phyllostomus CCCAG 5065

Hendra TATTA 5449 Nipah TATTA 5449 Niniventer

5164

ATTAC 5128 Gierle 5152 TACCA

Feline 5195

TAAAA

TGATA

Berylmys

Dolphin

AGCTA

5125 Saiga_antelope, GTTAG 5125 Goitered_gazelle,

GTTAG 5125 Domestic_sheep, GTTAG 5125 Wild_goat,

GTTAG 5125

Bharal,

GTTAG 5125 Domestic_goat, GTTAG 5125

Measles

GTTCATTGACATATCAGACGAGGAACAATTAAACAGATTAGGATTAGAGTTGA GTTCACTAACTTATATTAGGAGAGGGACAATTAAACAAATCAGACTCAGAGTTGA GTTCCCTTACATACATCCGGAGAGGGTCAATAAAGCAAATAAGGCTAAGAGTTGA GTTCTATTACGTATCTGAGGAGAGGTATTATTAAACAGATGAGGTTAAGATTTGA GCTCCTTAACATATCTCAGAAGAGGGGCGGTTAAACAGATCAGGCTGAGGGTTGA GCTCTCTGACCTTCGCCGCGGTTCCATCAAACAAATCAGGTTGAGGGTGGA GCTCTCTGACCTACCTTCGCCGCGGTTCCATCAAACAAATCAGGTTGAGGGTGGA GCTCTCTGACCTACCTTCGCTGCGGTTCCATCAAACAAATCAGGTTGAGAGTGGA GCTCTCTGACCTTCGCCGCGGTTCCATCAAACAAATCAGGTTGAGAGTGGA GCTCTCTGACCTTCGCCGCGGTTCCATCAAACAAATCAGGTTGAGGGTGGA GCTCTCTGACCTACCTTCGCCGCGGTTCCATCAAACAAATCAGGTTGAGAGTGGA GCTCTCTGACTTATCTCCGTCGAGGATCTATCAAACAGATAAGATTGAGAGTTGA GTTCTCTGACTTACTTAAGGCGGGGTTCGATCAAGCAAATTCGGTTGAGGGTTGA GTTCCTTAACTTACCTGAGAAGAGGGTCTATCAAGCAAATAAGATTAAGAGTGGA GTTCCCTGACATATCTTAGAAGAGGCTCAATCAAGCAGATAAGACTGAGAGTGGA GTTCCCTGACATATCTTAGAAGAGGCTCAATCAAGCAGATAAGATTGAGAGTGGA GTTCCCTGACATATCTTAGAAGAGGCTCAATCAAGCAGATAAGATTGAGAGTGGA GCTCTTTAACCTACCTTAGAAGAGGATGCATAAAGCAAATCAGGCTAAGGGTAGA GCTCCCTCACTTATCTCAGGAGAGGTTGTATTAAACAAATTCGGCTAAGAGTGGA

AAGTAATCGACACCACTACAATGCTAAGAGATAATATTTTAGTAGAAAACCCGCC AGGTTATAGATACCACAACAATGTTAAGGGACAATATAATTGTAGAGAATCCTCC GATTTATCGATGCCGCATCACAGCAATTACAGAATCTTGATCTTGCTCCTGTTGA GGGTAGCAGAAGACATTGTTAGTGACTTGTTGAATCCACAGATTGATAACAAGAA GAGTAGTTGAGGATGTCATAATTGAGTTAATGCAAGGCCCTGAAGTTGTCCCTGA GTGTATCGTTGGAACTATCTAGGATGATTAAGCCTGATGCGGTTTATCAAGCACC GGTTCGTATCGGAAGTTCTAATTGACGCTTCTGACCATAACCTGGGACCAATTAA GGTTTGTATTCGAGGCGTTGACAGACGTCGACTTTAAACAACCTCGCAAAGCTAA GGTTTGTATTCGAGGCGTTGACAGACGTCGACTTTAAACAACCTCGCAAAGCTAA GGTTTGTATTCGAGGCGTTGACAGACGTCGACTTTAAACAGCCTCGCAAGGCTAA GGTTTGTATTCGAGGCGTTGACAGACGTCGACTTTAAACAGCCTCGCAAGGCTAA GGTTTGTATTCGAGGCGTTGACAGACGTCGACCTTAAACAACCTCGCAAAGCTAA GGTTTGTATTCGAGGCGTTGACAGACGTCGACTTTAAACAACCTCGCAAAGCTAA

* ** **

CAACA 5147 Rinderpest TGAAC 5125 Phocine_distemper_north_sea TGCCT 5147 Phocine_distemper_caspian_sea, TACCT 5125 Dog_canine_distemper TACCT 5125 Ferret, TACCT 5125 Porcine

GGTTCATTTTTGAGGCTCTAACTGTAACAGATCCGCAGAAACCCAACTTTCAGCA GATTTATTGCAGACGCCATCGGGGATGTGGGAAATAGTCCCTTAAAAAGAGGCCC GATTCATCACTGATGCTGTTGGATGCTTAGAAAGGCGTCCTCTAAGAAATAATTC GATTCATCACTGATGCTGTTGGATGCTTAGAAAGGCGTCCTCTAAGAAATAATTC GATTCATCACTGATGCTGTTGGATGCTTAGAAAGGCGTCCTCTAAGAAATAATTC GGTTTGTGTCAGCTGCACTCTCAGAATCCAAAGATCCCCCTCGCATTATGAGGTC GATTTGTTTCAGATGCATTATCAGACTCTAAGGGATTCCAGAGAGATACGATCTG

61

Hendra AATCT 5503 Nipah AATCC 5503 Niniventer ACTGA 5224 Berylmys TATCA 5188 Gierle 5212 AGTCA Feline AATTT 5255 Dolphin ATTAC 5185 Saiga_antelope, TTTTT 5185 Goitered_gazelle, TTTTT 5185 Domestic_sheep, TTTTC 5185 Wild_goat, TTTCC 5185 Bharal, TTTTC 5185 Domestic_goat, TTTTC 5185 Measles ATTGC 5207 Rinderpest GCTGT 5185 Phocine_distemper_north_sea

5207

5185

Dog_canine_distemper

5185

5185

5185

5185

Phocine_distemper_caspian_sea,

AGGCA

Phyllostomus GGGCA 5125

5125

AAACTGGAGTACTAGATATTAGAGGT----TGCATAATATATAATCTAGAAGA AAACAGGAGTGTTAGACATCAGAGGT----TGTATAATATACAATTTAGAGGA GAATGAATTTGAGTACTCAATTCCCTTCATCTGCACCTGTAATATCATGGGACAA CAGATATTAATTGGAGCAACCCAGTTGCTCAGACATATGATTCTGATTTAGATGA CTCCTTCCGGCTGGCCGATGCTCTACCAGGAACACATGCCTTGGATCTAGATGA TTCCGTCTTCATGGGCTCTTATAGATATCAACCCTGAAGTAAATGACCTTAATGT AGGAGATTAAATTAGATAGCATAAATTTCTATCCCCCCAAGGAAGATGTTGCACG ATATATCGGTCGTTGGGTTGACTGATTTCTCTCCCCCTTACGACAACGTCGGTGA ATATATCGGTCGTTGGGTTGACTGATTTCTCTCCCCCTTACGACAACGTCGGTGA ATATATCGGTTGTTGGGTTGACTGATTTCTCTCCCCCTTGCGACAACGTTGGTGA ATATATCGGTTGTTGGGTTGGCTGATTTCTCTCCCCCCTTGCGACACGTTGGTGA ATATATCGGTCGTTGGGTTGACTGATTTCTCTCCCCCTTGCGACAACGTCGGTGA ATATATCGGTCGTTGGGTTGACTGATTTCTCTCCCCCCTTGCGACACGTCGGTGA ACATCTCAAATATGAGCATCAAGGATTTCAGACCTCCACACGATGATGTTGCAAA AAGCCGCTGATATGCACATAAGCAATTTTAGGCCGCCCTATGATGGTGTGGCAGA CTGTACCTCTCACCTTAAAAACAGGATTTGACCCGCCTAAAGATGATCTTACAAA CTAAGGCCTCAGAATTAAAGTCAGAATTTGACCCACCGAAAGATGACCTGGCCAA CTAAGGCCTCAGAATTAACGTCAGGATTTGACCCACCGAAAGATGACTTGGCTAA CTAAGGCCTCAGAATTAAAGTCAGAATTTGACCCACCGAAAGATGACTTGGCTAA AACAGGATACCCAGATGAGCCTAGGACTTGAACCCCCCTTAGACGATTTACTATC AATCAGATAGACAATTAACCCACAACCTTGAACCCCCTTCGGACGACATACTCAC

Hendra GTCAG 5563 Nipah

Phyllostomus

ACTTT

ACTTC

ACTTC

ACTTC

CTTGA

Ferret,

Porcine ATTAA

5563 GTCAG Niniventer

TATCAATGAATACTAAGTCCACGTCAAGAAAGGTGTTCAATTTGGGTTCAAAGTT TGTCTATGAACACAAAATCAGCATCAAAAAAGATCTTTAATCTTAATAGTAGGCC

Wed Dec 18 07:53:28 2024 alignments.txt CAATT 5284 Berylmys TAACT 5248 Gierle GAACT 5272 Feline GAATT 5315 Dolphin CAACT 5245 Saiga antelope, GAACT 5245 Goitered_gazelle, GAACT 5245 Domestic_sheep, GAACT 5245 Wild_goat, GAACT 5245 Bharal, GAACT 5245 Domestic_qoat, GAACT 5245 Measles CAATT 5267 Rinderpest TAATT 5245 Phocine_distemper_north_sea AAATT 5267 Phocine_distemper_caspian_sea, GAACT 5245 Dog_canine_distemper 5245 GAACT Ferret, GAACT 5245 Porcine 5245 AAATT Phyllostomus AAATT 5245

TTTCTGGCCTCCGCACCATTGATAAAGTAGTTCCATTGTCAGGGGAGATGATAAC TTGGAGAGCTGAATAGCAAATGGAAAGACATTCCTATTGGACAGATTAGGATACA TCAGTACTATAGGCACAGCCCAGCATGATCTCCCCATAATCGGTACTAGAGTAAT TAGGAACTATCAACACTTGAGGCACGATCTGCCTGTCACCGGAACCGGGGTCTC TAGGAACTATCAACACATTGAGGCACGATCTGCCTGTCACCGGAACCGGGGTCTC TAGGGACTATCAACACATTGAGGCACAATCTGCCTGTCACCGGAACCGGGGTCTC TGGGGACTATCAACACTTGAGGCACAATCTGCCTGTCACCGGAACCGGGGTCTC TAGGGACTATCAACACTTGAGGCACAATCTGCCTGTCACCGGAACCGGGGTCTC TAGGGACTATCAACACATTGAGGCACAATCTGCCTGTCACCGGAACCGGGGTCTC TCAAAGATATCAACACAAGCAAGCACAATCTTCCCATTTCAGGGGGTAGTCTCGC TAGGGACGATAAACTCGAGTAAGCATAACCTTCCTATACTTGGCACAGGTGTTTA TAAGTCAATTGTCAACAAAAACCCATAACTTGCCAATCACCGGCTTAGGAGTTAG TGAGTCAGCTGTCAACAAGGACACATAACTTACCCATTACAGGATTAGGAGTCCG TGAGTCAGCTGTCAACAAGGACACATAACTTACCTATTACAGGATTAGGAGTCCG TGAGTCAGCTGTCAACAAGGACACATAACTTACCTATTACAGGATTAGGAGTCCG TGGGATCTATTAACACAAATGCACACAATATTCCCGTGATAGGGGAAGGTCTCCG TAGGATCCATTAACACAGATGCCAGCAACATCCCTGTGATAGGAGAAGGTGTGAG

Hendra ATTAA 5623 Nipah ATTAA 5623 Niniventer TCTGG 5344 Berylmys TTTTG 5308 Gierle 5332 GCTTG Feline 5375 TCTAG Dolphin **AGTAG** 5305 Saiga_antelope, CGTAG 5305 Goitered_gazelle, **CGTAG** 5305 Domestic_sheep, 5305 CGTAG Wild_goat, CGTAG 5305 Bharal, 5305 CGTAG Domestic_goat, CGTAG 5305 Measles

TGTTG

5327

TTGAAACCACAAATATAGAAGGATAGGATTAAATTCGTCTTCTTCCTACAAGGC TGGAGAATCATAAATATAGAAGGATAGGTCTCAACTCATCATCTTGTTACAAGGC ACGAGGTTCATGCATTCAGAAGGATTGGATTGAACTCAACTGCTTGTTACAAAGC ATGAGATTCATGCATACAGGAGAGTAGGGGTAAACTCTAGTGCTTGTTATAAAGC ACGAGATCCATGCTTATCGGAGAGTTGGAATCAACTCAAGTGCATGCTATAAAGC ATGAAATACATGCATATAGGAGGATCGGAGTTAATTCAACTGCATGTTATAAAGC ATGAAGTCCACGCTTATCGTAGAATTGGCCTGAATTCATCAGCATGTTATAAAGC ATGAAGTCCACGCTTATCGTAGAATTGGCCTGAATTCATCAGCATGTTATAAAGC ATGAAGTCCACGCTTATCGTAGAATTGGCCTGAATTCATCAGCATGTTATAAAGC ATGAAGTCCACGCTTATCGTAGAATTGGCCTAAATTCATCAGCATGTTATAAAGC ATGAAGTCCACGCTTATCGTAGAATTGGCCTAAATTCATCAGCATGTTACAAAGC ATGAAGTCCACGCTTATCGTAGAATTGGCCTGAATTCATCAGCATGTTATAAAGC

TTATT

5464

```
Rinderpest
                                  ACGAGGTCCATGCGTTTCGCAGGATAGGATTAAACTCGTCTGCTTGTTACAAGGC
AGTGG
       5305
                                  Phocine_distemper_north_sea
       5327
AGTTG
                                  ATGAGGTTCACTCATTCAGAAGAATTGGGATCAACTCTACTGCATGTTACAAGGC
Phocine_distemper_caspian_sea,
AGTTG
       5305
Dog_canine_distemper
                                  ATGAGGTTCATTCAGAAGAATTGGGATCAACTCTACTGCATGTTACAAGGC
AGTTG
       5305
Ferret,
                                  ATGAGGTTCACTCATTCAGAAGAATTGGGATCAACTCTACTGCATGTTACAAGGC
       5305
CGTTG
                                  ACGAAATCCATGCATTTAGAAGGTTGGGTGTAAACTCAACAGCATGTTATAAAGC
Porcine
AGTAG
       5305
Phyllostomus
                                  ACGAAATCCATGCATTCAGAAGACTTGGGGTCAACTCTACAGCATGTTACAAAGC
GGTGG 5305
                                  ATCTGTCACCGTTGATTCAACGCTACCTGCCCGCAGGTTCACAACGATTATTTGT
Hendra
AGGTG
       5683
Nipah
                                  ATCTATCACCTCTGATTCAAAGGTATTTGCCGTCGGGAGCTCAAAGGTTGTTTAT
AGGAG
       5683
Niniventer
                                  AAATAATCCCGTCTATTCGTGGGTTCATAGATCATGATCTTCCTAGATTATATTT
AGGGG
       5404
Berylmys
                                  AAATCTTGTCATTTATAACTGGGTACATCGATCATACTAAAGCTAGGATGTACAT
TGGGG
       5368
                                  AAATTGTGCCTTACATCTCGGGGTACATCAATCATGAGGCAGCAAGACTCTATCT
Gierle
AGGTG
       5392
                                  AGCTATTGTCTGTTCTAAATCGGTTTATGTCTAATCCATCAGGTGCATTGTTTTT
Feline
       5435
AGGTG
                                  AAGTATCCTCGGTAATCAAGAGCATGATTGAACCAGGAGAGGATGGGTTATTCTT
Dolphin
       5365
GGGTG
                                  AGATCTCCACGTTAATCAAGCCATCCTTAGAAGTCGGAGAGCATGGATTGTTCTT
Saiga_antelope,
AGGAG
       5365
Goitered_gazelle,
                                  AGATCTCCACGTTAATCAAGCCATCCTTAGAAGTCGGAGAGCATGGATTGTTCTT
AGGAG
       5365
                                  AGATCTCCACGTTAATCAGGCCATCCTTAGAAGTCGGAGAGCATGGATTGTTCCT
Domestic_sheep,
AGGAG
       5365
Wild_goat,
                                  AGATCTCCACGTTAATCAAGCCATCCTTAGAAGTCGGAGAGCATGGATTGTTCCT
AGGAG 5365
Bharal,
                                  AGATCTCCACGTTAATCAAGCCATCCCTAGAAGTCGGAGAGCATGGATTGTTCTT
AGGAG
       5365
Domestic_goat,
                                  AGATCTCCACGTTAATCAAGCCATCCTTAGAAGTCGGAGAGCATGGATTGTTCTT
AGGAG
       5365
Measles
                                  AGATATCAACATTAATTAGGAGATGCCTTGAGCCAGGGGAAGACGGCTTGTTCTT
GGGTG
      5387
Rinderpest
                                  AGATATCCACGCTAATCAAGAGCTCTATGGACCCAGAAGAGGATAGCTTGTTCTT
       5365
AGGGG
Phocine_distemper_north_sea
                                  AGATAATTTCTCTTATCAAAAAAGAATTCTCTACAGGAGAACACGGATTATTTTT
GGGAG
       5387
Phocine_distemper_caspian_sea,
                                  AAATAGCTTCTGTGATTAAGAACGAATTTACGTCTGAAGAACACGGATTATTCCT
AGGAG
       5365
Dog_canine_distemper
                                  AAATAGCTTCCGTGATTAAGAACGAATTTACGTCTGAAGAACACGGATTATTCCT
       5365
AGGAG
                                  AAATAGCTTCTGTGATTAAGAACGAATTTACGTCTGAAGAACACGGATTATTCCT
Ferret,
       5365
AGGAG
Porcine
                                  AAATTGCATCATTGATCCGCTGCCATTTTGAAGAAGGTGACCAAGGGCTGTTTCT
CGGGG
       5365
Phyllostomus
                                  AGATTGTCTCCCTGATACGGTGTAACTTCGAGATAGGAGATCATGGATTATTCCT
TGGTG
       5365
** *
Hendra
                                  AAGGGTCAGGAAGTATGATGCTATTATATCAACAGACTTTAGGATGTTCGATATC
CTTTT
       5743
Nipah
                                  TTTTT
       5743
Niniventer
                                  AGGGAGCAGGTTCTATGCTTGCAGTCTATCAACATTACTTAGGTCATGGGTTAGT
```

Berylmys 5428 TTACT Gierle 5452 CTATT Feline TTATT 5495 Dolphin TTATT 5425 Saiga_antelope, TTACT 5425 Goitered_gazelle, TTACT 5425 Domestic sheep, TTATT 5425 Wild_goat, TTATT 5425 Bharal, TTATT 5425 Domestic_goat, TTATT 5425 Measles CTTCT 5447 Rinderpest CTTTT 5425 Phocine_distemper_north_sea CTACT 5447 Phocine_distemper_caspian_sea, 5425 TTATT Dog_canine_distemper TTATT 5425 Ferret, 5425 TTATT Porcine CTATT 5425 Phyllostomus CTACT 5425

Hendra CCCTT 5803 Nipah TCCCT 5803 Niniventer TCCGT 5524 Bervlmvs CCCTG 5488 Gierle TCCAT 5512 Feline 5555 TCCAT Dolphin 5485 TCCAT Saiga_antelope, TCCTT 5485 Goitered_gazelle, TCCTT 5485 Domestic_sheep, TCCTT 5485 Wild_goat, TCCTT 5485 Bharal, TCCTT 5485 Domestic_goat, TCCTT 5485 Measles TCCCT 5507

Rinderpest

AGGGGGCGGATCAATGATGGTAATCTACCAACATTATTTGGGTCATGGCAAAGT AAGGAGCAGGATCTATGATGGTAGTATATCAACATTATCTTGGTCATGGACAAGT AAGGAGCAGGATCAATGCTGGTCACATACCGTGCTTTTGTCCCATTTAAGACAAT AAGGTTCAGGTTCTATGCTAGTCACGTATAGGGAAATACTCAAGCTTAAACGTTG AAGGTTCCGGTTCAATGCTGGCTGCGTACAAAGAAGTTCTTAAATTAGCAAATTG AAGGTTCCGGTTCAATGCTGGCTGCGTACAAAGAAGTTCTTAAATTAGCAAATTG AAGGTTCCGGTTCAATGCTGCCTGCGTACAAGGAAGTTCTTAAATTAGCAAATTG AAGGTTCCGGTTCAATGCTGGCTGCGTACAAGGAAGTTCTTAAATTAGCAAATTG AAGGTTCCGGTTCAATGCTGGCTGCGTACAAGGAAGTTCTTAAATTAGCAAATTG AAGGTTCCGGTTCAATGCTGGCTGCGTACAAGGAAGTTCTTAAATTAGCAAATTG AGGGGTCGGGTTCTATGTTGATCACTTATAAGGAGATACTAAAACTAAACAAGTG AAGGATCAGGGTCAATGTTGATAACGTATAAAGAAATCCTTAAATTAAAGAAGTG AAGGCTCAGGTGCTATGCTGACTGTATATAAAGAGTTATTAAGGTTAACAAGATG AAGGTTCAGGTGCAATGTTGACAGTATATAAAGAGCTATTAAGATTGTCAAGATG AAGGTTCAGGTGCAATGTTGACAGTATATAAAGAGCTATTAAGATTGTCAAGATG AAGGTTCAGGTGCAATGTTGACAGTATATAAAGAGCTATTAAGATTGTCAAGATG AAGGGTCTGGAGCAATGCTGGTTGCATATAAGGAAATTCTAAAATTAGGCAGATG * ** * ** *** * **

ACAACTCCGGTATTGATGGTGATTATATACCAGGGCAGAGAGAATTGAGATTATT
ACAATTCAGGTATAGATGGAGATTATATACCAGGTCAAAGAGAACTGAAACTATT
ATAATTCAGGGGTATCAAGTGAGTCATTAAAAAAGTCAGCGAGAGTTCAATCCATA
ATAATTCAGGGGTTTACATAGAAAATCTTCAAGGTCAGCGAGAATTTCGACCATT
ACAATTCAGGTGTTCATCCTGGGTCTCTCAACAGCCAACGAGAGTTTAGACCGTA
ATAATAGTGGTATTTCAGTTCAAAATGTTCAGGGCCAGAGAGAATTGAGTCTATA
ACAACAGAGGGAGTGTCAGTCGAGTCTAGATCTGGGCAAAGAGAGATATCTCCCTA
ACAACAGCGGAGTAACAGCGGAGGGCAGAGCCGGACAGAGGGAAATATCTCCCTA
ACAACAGCGGGGTAACAGCGGAGGGCAGAGCCGGACAGAGGGAAATATCTCCCTA
ACAACAGCGGGGTAACAGCGGAGGGCAGAGCCGGACAGAGGGAAATATCTCCCTA
ACAACAGCGGGGTAACAGCGGAGGGCAGAGCCGGACAGAGGGAAATATCTCCCTA
ACAACAGCGGGGTAACAGCGGAGGGCAGAGCCGGACAGAGGGAAATATCTCCCTA
ACAACAGCGGGGTAACAGCGGAGGGCAGAGCCGGACAGAGGGAAATATCTCCCTA
ACAACAGCGGGGTAACAGCGGAGGGCAGAGCCGGACAGAGGGAAATATCTCCCTA
ACAACAGCGGGGTTACCAGCGAGGGCAGAGCCGGACAGAGGGAAATATCTCCCTA
ACAACAGCGGGGTTACCAGCGAGGGCAGAGCCGGACAGAGGGAAATATCTCCCTA
ACAACAGCGGGGTTACCAGCGAGGGCAGAGCCGGACAGAGGGAAATATCTCCCTA
ACAACAGCGGGGTTACCAGCGAAGGGCAGAGCCGGACAGAGGGAAATATCTCCCTA
ACAACAGCGGGGTTACCAGCAGAGGCAATCTAGATCAGGCCAGCGAGAGTTAGCACCCTTA

Berylmys

arrymmencs.cac wear becare o	7.55.20 2024 05				
CCCAT 5485 Phocine_distemper_north_sea					
TCCTT 5507	ATAACAGTGGTGTATCAGTAGAGTCAAGAACTGGTCAACGAGAGATCTCACCTTA				
Phocine_distemper_caspian_sea, CCCTT 5485	ATAACAGTGGTGTCAGTAGAGTCCAGAACTGGACAACGAGAGATTTCACCTTA				
Dog_canine_distemper CCCTT 5485	ATAACAGTGGTGTCGGTAGAATCCAGAACTGGACAACGAGAGATTTCACCTTA				
Ferret,	ATAACAGTGGTGTCGGTAGAATCCAGAACTGGACAACGAGAGATTTCACCTTA				
CCCTT 5485 Porcine	ATAACAGTGGTCTCTCCTGATTCCCGAACTGGTCAACGGGAACTATCCCCGTA				
CCCAT 5485 Phyllostomus	ATAATAGCGGTGTTTCTCCTGATGCCAGGACAGGTCAGAGGGAGATATCACCATA				
TCCGT 5485	* * * * * * * * * * * * *				
**					
Hendra AGTGG 5863	CCGAATATTCAATAGCTGAAGACGATCCGTCACAATCTGATAAGCTAAAAGGTCT				
Nipah	CTGAATACTCAATTGCTGAGGAAGACCCATCTCTGACGGGGAAATTGAAAGGACT				
AGTGG 5863 Niniventer	CGGAAGTGAGCTTAATCAAGAACCGACAGCCTCATATTTTTACATCAAA				
TGTGC 5578 Berylmys	CTGAAGTCAGTTTGGCCATCCGAAATTCTCGAGGACTTTGGAATTCAAG				
TATAC 5542	00.00.001011000001100000000000000000000				
Gierle GGTCA 5566	CTGAGGTATCTTTGGCGAAAAGGTCAACCATGGACAAATGGAGTTCTAA				
Feline	CTGAAGTGGCACTAGTTGACAACAAAAATCGCTTGGCTAATGACCCCAA				
TATCA 5609					
Dolphin TGTTA 5533	CAGAAGTTAGTCTTGTTGAACACCAACTAGGGCTGGATCGTAG				
Saiga_antelope, TGTTA 5533	CAGAGATGAGCCTAGTAGAGAATCAAATGGGGATAGAGCGGAG				
Goitered_gazelle, TGTTA 5533	CAGAGATGAGCCTAGTAGAGAATCAAATGGGGATAGAGCGGAG				
Domestic_sheep,	CAGAGATGAGCCTAGTAGAGAATCAAATGGGGATAGAGCGGAG				
TGTTA 5533 Wild_goat,	CAGAGATGAGCCTAGTAGAGAATCAAATGGGGATAGAGCGGAG				
TGTTA 5533 Bharal,	CAGAGATGAGCCTAGTAGAGAATCAAATGGGGATAGAGCGGAG				
TGTTA 5533 Domestic_goat,	CAGAGATGAGCCTAGTAGAGAATCAAATGGGGATAGAGCGGAG				
TGTTA 5533 Measles	CCGAAGTTGGCCTTGTCGAACACAGAATGGGAGTAGGTAATAT				
TGTCA 5555 Rinderpest	CTGAGGTAAGCCTGGTCGAACATCAGCTTGGTGCAGAGAAAAC				
TGTCA 5533 Phocine_distemper_north_sea	CTGAGGTAAGCTTAGTAGAGCATCAATTAGGGCTTGATCGTCT				
GGCGA 5555 Phocine_distemper_caspian_sea,	CTGAGGTCAGTCTGGTGGAACATCAATTAGGACTCGATAAATT				
GGCGA 5533 Dog_canine_distemper	CTGAGGTCAGTCTGGTGGAACATCAATTAGGACTCGATAAATT				
GGTGA 5533					
Ferret, GGTGA 5533	CTGAGGTCAGTCTGGTGGAACATCAATTAGGACTCGATAAATT				
Porcine	CAGAAGTGAGTATGGTTGAGCATAAATTATGTCTTGAAAAATC				
AGTTA 5533					
Phyllostomus AGTCA 5533	CAGAGGTTAGCCTGGTCGAGCACAAGCTTGGTCAAGAGAGATC				
	* ** *				
Hendra	TCCCATTATTTAATGGAAGGCCCGAAACCACGTGGATAGGGAACTTAGATTCATA				
CGAGT 5923 Nipah	TGCCCCTATTCAATGGAAGACCAGAAACAACATGGATCGGGAATTTAGACTCCTA				
CGAGT 5923 Niniventer	AATTATTATTCAATGGTAGACCTGAGGTGACATGGGTAGGCAATCCAGAATGTTT				
TAACT 5638					
Rerulmus	A A GTA TTGTTTA A CGGCAGA CCAGA A GTGACA TGGA TTGGA A A TCTTGA GTGTTA				

 ${\tt AAGTATTGTTTAACGGCAGACCAGAAGTGACATGGATTGGAAATCTTGAGTGTTA}$

TCACT 5602 Gierle CCATT 5626 Feline TGCTT 5669 Dolphin TAAGT 5593 Saiga_antelope, CAAGT 5593 Goitered gazelle, 5593 CAAGT Domestic sheep, CAAGT 5593 Wild_goat, CAAGT 5593 Bharal, CAAGT 5593 Domestic_goat, CAAGT 5593 Measles CAATT 5615 Rinderpest CAATT 5593 Phocine_distemper_north_sea TAAGT 5615 Phocine_distemper_caspian_sea, CAAGT 5593 Dog_canine_distemper CAAGT 5593 Ferret, 5593 CAAGT Porcine TAAGT 5593 Phyllostomus CAAAT 5593

Hendra ATCAG 5983 Nipah

5983

GTCTG

Niniventer ATCAG 5698 Berylmys AAGCA 5662 Gierle GAGTG 5686

Feline GTCCA 5729

Dolphin
GACCT 5653
Saiga_antelope,
GACGC 5653
Goitered_gazelle

Goitered_gazelle, GACGC 5653 Domestic_sheep, GACAC 5653 Wild_goat, GACAC 5653

Bharal, GACGC 5653 Domestic_goat, GACAC 5653

Measles
GACCT 5675
Rinderpest
AACCC 5653

CGGTCCTTTTCAATGGACGCCCTGAGGTGACATGGCTTGGAAACTTAGAGTGTTA

 ${\tt AAGTCTTGTTCAATGGTAAACCAGAGTCTACGTGGGTTGGAAACATCGACTGTTT}$

 ${\tt AGGTGCTCTTTAACGGGAGGCCCGAAGTCACGTGGGTAGGCAGTATAGATTGCTT}$

 ${\tt AAGTACTATTCAACGGGAGGCCCGAGGTTACCTGGATAGGTAGTGTAGATTGCTT}$

 $\tt CTGTACTTTCAATGGAAGACCAGAAGTCACATGGGTCGGGAGTGTTGATTGTTA$

 $\tt CTGTGCTTTTCAATGGCAGACCAGAAGTAACTTGGGTTGGGAGTGTTGATTGTTA$

 $\tt CTGTGCTTTTCAATGGGAGACCAGAAGTAACTTGGGTTGGGAGTGTTGATTGTTA$

 $\tt CTGTGCTTTTCAATGGGAGACCAGAAGTAACTTGGGTTGGGAGTGTTGATTGTTA$

ACATAATCAACAGAACAGCCGGTCGTAACATCGGATTGGTACACTCAGATATGGA
ATATCATAAATAGGACAGCGGGGCGAAGTATAGGTCTTGTCCATTCTGACATGGA
TTATATGTGAAGCAATTCCTATTGGATCACTGGGCCTGATACATTGTGATCTTGA
ATATTACATCCCAAATTCAACCTGGATCTCTTGGATTTTATCCATAGTGATATCGA
ACATCACTGCCCAGATCCCGCCCAGTTCTATTGCCTTTATCCATTGTGATATCGA
ATATTCTTAGCCACATTGAGACCTCAAGCTTGACATTGATACATAGTGATATTGA
ATATCATTAGTAATATACCATCTTCAAGTCTGGGACTAATCCACTCAGATATTGA
ACATAATCAGTAACATCCAAACCTCTAGTCTGGGTTTCATACATTCAGATATTGA
ACATAATCAGTAACATCCAAACCTCTAGTCTGGGTTTCATACATTCAGATATTGA
ACATAATCAGTAACATCCAAACCTCTAGTCTGGGTTTCATACATTCAGATATTGA
ACATAATCAGTAACATCCAAACCTCTAGTCTGGGTTTCATACATTCAGATATTGA
ACATAATCAGTAACATCCAAACCTCTAGTCTGGGTTTCATACATTCAGATATTGA
ACATAATCAGTAACATCCAAACCTCTAGTCTGGGTTTCATACATTCAGATATTGA
TCATAGTCAGTAACATCCAAACCTCTAGTCTGGGTTTCATACATTCAGATATTGA
TCATAGTCAGTAATATCCCTACCTCTAGTCTGGGTTTCATACATTCAGATATTGA

ATATCATCAGCAATATACAGACATCTAGCCTTGGCCTAATACACTCAGACATAGA

Niniventer

Berylmys

5818

5782

AGGTT

TGATT

```
Phocine_distemper_north_sea
                                    ATATACTTAGCCAAATACCTGCTAGCAGTCTAGGATTAATACACTCAGACATAGA
ATCAC
        5675
                                    ACATACTGAGCCAGATCTCTGCTAGCAGTCTTGGGTTGATTCACTCGGATATAGA
Phocine_distemper_caspian_sea,
GTCAC
        5653
                                    ACATACTGAGCCAGATCTCTGCTAGCAGTCTTGGGTTGATTCACTCGGATATAGA
Dog_canine_distemper
GTCAC
        5653
Ferret,
                                    ACATACTGAGCCAGATCTCTGCTAGCAGTCTTGGGTTGATTCACTCGGATATAGA
GTCAC
        5653
Porcine
                                    ATATCTTAAGCCAGATACCTACCGGTAGTATAGCGGTTATACACTCCGATATTGA
GAGCC
       5653
                                    ATATATTGAGTCAAATACCTACAGGCAGCCTGTCCGTTATACATTCTGACATTGA
Phyllostomus
AAGTC
       5653
                                                                                        * **
                                    GCATAGACAACAAGTGGAAGAAATTATGATAGAGCATTCACACCTTATCTCAAT
Hendra
AGCAA
        6043
                                    GGATTGACAAAAATGTAGAGGAGATACTAGTAGAACATTCCCATCTAATATCTAT
Nipah
CGCGA
       6043
Niniventer
                                    \mathsf{TGGATAGAATGATCCTATTAAAGTTCTGGAGGAGTTATGTCATGTCTTCTCTCT
GTATA
       5758
                                    CCAGTGAGAAACAACTACCGAAATTTTTGAGGAATTAGTTCATGTCGGTTGCCT
Bervlmvs
AAGTT
       5722
Gierle
                                    TCCCTGAGAAGTCAGAAGTTGAAGTGTTTGAAGAACAAGTTCATGTAGCCTGTAT
CGCTA
        5746
                                    GCTTAAGCAAGACGAAGAATAAAATTCTTGAGGAGCTGTGCCACATTCTGTCAAT
Feline
        5789
GGCAC
                                    TACCAAATAAGGACCTAGTTGAAAAGCTGGAAGAATTAACTGCCATATTGTCGAT
Dolphin
       5713
GACAT
                                    TCCCAACCAAGATGCTGTTGAGAAATTGGAGGAATTTGCCTCTATCCTATCCTT
Saiga_antelope,
       5713
ATCCT
Goitered_gazelle,
                                    TCCCAACCAAGATGCTGTTGAGAAATTGGAGGAATTTGCCTCTATCCTATCCTT
ATCCT
       5713
Domestic sheep,
                                    TCCCAACCAAGACGCTGTTGAGAAATTGGAAGAATTTGCCTCTATCCTATCCTT
ATCCT
        5713
                                    TCCCAACCAAGACGCTGTTGAGAAATTGGAAGAATTTGCCTCTATCCTATCCTT
Wild_goat,
ATCCT
       5713
Bharal,
                                    TCCCAACCAAGATGCTGTTGAGAAATTAGAAGAATTTGCCTCTATCCTATCCTT
ATCCT
       5713
Domestic_goat,
                                    TCCCAACCAAGATGCTGTTGAGAAATTAGAAGAATTTGCCTCTATCCTATCCTT
ATCCT
       5713
Measles
                                    TACCTAACAAGATACTATAGAGAAGCTAGAGGAATTGGCAGCCATCTTATCGAT
GGCTC
       5735
Rinderpest
                                    TCCCTACAAAAGATATCACAGAGAAATTGGAAGAGTTGTCAGCTATCCTAGCGTT
GGCTC
       5713
Phocine_distemper_north_sea
                                    TTCCCAACAAGATGCAATTGAAAAGTTAGAAGAACTGTCTGCCATCCTGTCTAT
GACTT
        5735
Phocine_distemper_caspian_sea,
                                    TACCGGACAAAGACATAATCGAAAAGTTGGAGGAATTGTCTGCTATATTATCAAT
GACTT
        5713
Dog_canine_distemper
                                    TACCGGATAAAGACATAATTGAAAAGTTGGAAGAATTGTCTGCTATATTATCAAT
        5713
GACTT
Ferret,
                                    TACCGGATAAAGACATAATTGAAAAGTTGGAAGAATTGTCTGCTATATTATCAAT
GACTT
        5713
Porcine
                                    TCCCTGACAAAGACGCTGTTGAGAAACTAGAAGAGCTTTCTGCAATCTTATCGAC
        5713
GGCCC
Phyllostomus
                                    TTCCTGATAAAGATATAGTAGAAAAGTTAGAGGAATTGTCAGCAATATTATCAAC
AGCAC
       5713
                                             * *
                                                                     * *
Hendra
                                    TCAATGTAATGATAGAAGACGGTGTTCTTGTATCTAAAATAGCATTTGCACCAGG
GTTCC
        6103
Nipah
                                    TAAATGTTATGATGGAGGACGGACTATTAGTATCCAAGATAGCATACACCCCTGG
ATTCC
        6103
```

CATTCCTTGGTGCAAGGAATTCTGCTCTTGTGATTAAATTGTTACCAGAAAAGCA

TATTATTAGGTGAACCTAAGTCATCGTTAGTTATGAAAATCATGCCTAGACCTGG

Gierle 5806 TGACT Feline 5849 TGACT Dolphin GGACT 5773 Saiga_antelope, GGATT 5773 Goitered_gazelle, GGATT 5773 Domestic_sheep, GGATT 5773 Wild_goat, GGATT 5773 Bharal, GGATT 5773 Domestic_goat, GGATT 5773 Measles GGATT 5795 Rinderpest AGACT 5773 Phocine_distemper_north_sea TGACT 5795 Phocine_distemper_caspian_sea, CGACT 5773 Dog_canine_distemper CGACT 5773 Ferret, CGACT 5773 Porcine GGACT 5773 Phyllostomus AGATT 5773

TTCTCGTAGGTGAGGTCGGTTCTTCTCTGGTAATCAAGATGCAGCCCAAGCCAGG TCATTTTGGGGAAAATCGGATCTTTATTAGTTGTCAAGTTATTACCAAGGGTCGG TTATTTTAGGTAAAATAGGATCTCTCCTAATAATCAAGATAATGCCGACAAGCGG TGATTTTGGGGAAAATCGGCTCTATTACAGTTGTCAAAATTATGCCCATTAGCGG TGATTTTGGGAAAAATCGGCTCTATTACAGTTGTCAAAATTATGCCCATTAGCGG TGATTTTGGGAAAAATCGGCTCTATTACAGTTGTCAAAGTTATGCCCATTAGCGG TGATTTTGGGAAAAATCGGCTCTATCACAGTTGTCAAAATTATGCCCATTAGCGG TGATTTTGGGGAAAATCGGCTCTATTACAGTTGTCAAAATTATGCCCATTAGCGG TGATTTTGGGAAAAATCGGCTCTATTACAGTTGTCAAAATTATGCCCATTAGCGG TACTCCTTGGCAAAATAGGATCAATACTGGTGATTAAGCTTATGCCTTTCAGCGG TATTGCTAGGTAAGGTAGGTTCAGTATTGGTTATCAAAGTAATGCCTATAAGTGG TGATTTTGGGCAAGGTAGGATCAGTTCTAGTAATTAAGATCATGCCAATGAGCGG TGATATTAGGGAAGGTAGGGTCAGTGTTAGTAATTAAGATCATGCCAGCTAGTGG TGATATTAGGGAAGGTAGGGTCAGTGTTAGTAATTAAGATCATGCCAGTTAGTGG TGATATTAGGGAAGGTAGGGTCAGTGTTAGTAATTAAGATCATGCCAGTTAGTGG TGATATTAGGCAAGGTTGGCTCAGTTTTGATTATCAAGATAATGCCCATTAGCGG TAATCCTAGGCAAGGCCGGGTCAACCTTGATTATCAAGATAATGCCTATTAGCGG * *

Hendra TTTCC 6163 Nipah TTTCC 6163 Niniventer 5878 AATCC Berylmys TTATC 5842 Gierle AATCC 5866 Feline TTTAC 5909 Dolphin 5833 ATACC Saiga_antelope, CTATC 5833 Goitered_gazelle, 5833 CTATC Domestic_sheep, CTATC 5833 Wild_goat, CTATC 5833 Bharal, 5833 CTATC Domestic_goat, CTATC 5833 Measles CTACC 5855 Rinderpest CTACC 5833 Phocine_distemper_north_sea GGGTTCAAGGTTTTATACTTTATACACTCCCACATTTTCTTCAGAGTTTCATAGT

ATGTA

Gierle

5962

TTACC 5855 GGGTTCAAGGATTTATTTTATATGCACTCCCACATTTTCTTCGAAGTTTCATAGT Phocine_distemper_caspian_sea, TTACC 5833 GGGTTCAAGGATTTATTTTGTATGCACTCCCACATTTTCTTCGAAGTTTCATAGT Dog_canine_distemper TTACC 5833 Ferret, GGGTTCAAGGATTTATTTTGTATGCACTCCCACATTTTCTTCGAAGTTTCATAGT TTACC 5833 Porcine GGGTACAGGGTTTCATAAAATTCGCACTCGTGCATTATCTTAAAGGGATAATAAT TTACC 5833 Phyllostomus GGGTTTACGGCTTCATTAAATTTGCCCTCGTGCATTATTTAAAGGGGATAATAGT TTACC 5833 CAGTGTATAGTAATCCAGAGTCCACAGAAGTGTATCTCATCTGCTTGCAGAAAAC Hendra AATTA 6223 CAGTATATAGTAATCCAGATTCTACTGAAGTATATCTTCTTTGCTTACAGAAGAC Nipah GGTCA 6223 Niniventer GGCCA 5938 Berylmys CAGGATTTAGCAACCCATCATCATCAGAGTGTTATATTCTATTTAGAGGACTAAG GATGA 5902 Gierle CAAGTTACAGCAACTTATCATCATCTGAGATTTACATTCTATGCCGAGGTTTAAG GTTAA 5926 Feline CTAGGTTTAGTAACATGTCATCATCTGAGGTTTACTATATAGGGATTCACCTCAA 5969 TACAA CTAGATACAGTAACTTTATCTCCACTGAGTGTTATCTAGTATTTGTTGGGCTTAA Dolphin 5893 GTACA CGAGATATAGTAACTTCATCTCGACTGAGTGTTACCTTATTATGATAGGATTAAA Saiga_antelope, GGCCA 5893 CGAGATATAGTAACTTCATCTCGACTGAGTGTTACCTTATTATGATAGGATTAAA Goitered_gazelle, GGCCA 5893 Domestic_sheep, CGAGATATAGTAACTTCATCTCGACTGAGTGTTACCTTATTATGATAGGATTAAA GGCCA 5893 CGAGATATAGTAACTTCATCTCGACTGAGTGTTACCTTGTTATGATAGGATTAAA Wild_goat, GGCCA 5893 Bharal, CGAGATATAGTAACTTCATCTCGACTGAGTGTTACCTTATTATGATAGGATTAAA GGCCA 5893 Domestic_goat, CGAGATATAGTAACTTCATCTCAACTGAGTGTTACCTTATTATGATAGGATTAAA GGCCA 5893 Measles CTACCTACACCAACTTCATATCTACTCAATCTTATTTACTTATCACACACATCTCAAAGCTA 5915 Rinderpest CGAGATATAGTAACTTCATATCAACTGAGGCATATCTAGTCCTGTTGGGACTCAG GGCCA 5893 Phocine_distemper_north_sea CTAGATATAGCAATTTTGTATCCACAGAGGCATATCTCGTTTTTATAGGACTAAG GGCAG 5915 Phocine_distemper_caspian_sea, CAAGATACAGCAATTTTGTGTCAACAGAGGCCTACCTTGTTTTTACTGGTCTTAG AGCAG 5893 Dog_canine_distemper CAAGATACAGCAATTTTGTGTCAACAGAGGCCTACCTTGTTTTTACCGGTCTTAG AGCAG 5893 Ferret, CAAGATACAGCAATTTTGTGTCAACAGAGGCCTACCTTGTTTTTACCGGTCTTAG 5893 AGCAG Porcine CGAGGTACAGTAATTATGTGTCAACTGAGGCCTATTTAGTATTCCAAGGAATGCG AGCTA 5893 CTAGATACAGCAACTATGTCTCTACTGAGTGTTACTTAGTGTTCCAGGGGATGCG Phyllostomus GGCCA 5893 ** ** AGACCATAATTCCACCTCAAAAAGTTCTTGATCATTCATATCTCAGTGATGAAAT Hendra CAATG 6283 Nipah AGACTATTGTTCCCCCGCAAAAAGTCCTTGAGCACTCTAATTTGCACGATGAAGT CAATG 6283 Niniventer ACATCAAATATAATCCTAATGTCTTAACATCCAGACTATCTAATATTAGTTTAGG ATCTG 5998 Berylmys ATAGATTGCTTAATCCTGTTCAAGTGGTTAATAGACTGGTACAGCTAGGGCCAAT

ACCGACTTCTAAACCCTACTACTATTGTGTCTAGACTAGTCAGTATGGGAAGTTT

AAGTA 5986 Feline AACTC 6029 Dolphin 5953 AACAT Saiga_antelope, GACTG 5953 Goitered_gazelle, GACTG 5953 Domestic sheep, GACTG 5953 Wild_goat, GACTG 5953 Bharal, GACTG 5953 Domestic_goat, GACTG 5953 Measles GACTT 5975 Rinderpest AACTA 5953 Phocine_distemper_north_sea AACAT 5975 Phocine_distemper_caspian_sea, AACTT 5953 Dog_canine_distemper AACTT 5953 Ferret, AACTT 5953 Porcine GACAA 5953 Phyllostomus GACCA 5953

ATCGATTGATCCTGATAGAATAGTACAATACATAGTTAGAAATTTACAACC ATAGATTAATCAACCCTGAAGGAATAAAACAACAACTACTAAAATTGAGCATAAG ATCGATTAATAAACCCAGAAGCCATTAAGCAAAGCATAATCAGAGCGGGGGTCAG ATCGATTAATAAACCCAGAAGCCATTAAGCAAAGCATAATCAGAGCGGGGGTCAG ATCGATTGATAAACCCAGAAGCCATTAAGCAAAGCATAATCAGAGCGGGGGTCAG ATCGATTGATAAACCCAGAAGCCATTAAGCAAAGCATAATCAGAGCGGGGGTCAG ATCGACTGATAAACCCAGAAGCCATTAAGCAAAGCATAATCAGAGCGGGGGTCAG ATCGATTGATAAACCCAGAAGCCATTAAGCAAAGCATAATCAGAGCGGGGGTCAG ACCGGCTAATGAATCCTGAAAAGATCAAGCAGCAGATAATTGAATCATCTGTGCG ATAGACTGATAGATCCTGAAAGAATTAAACAACAGGTGATGGAATCCGGGATCAG GGAGATTAGTCAATCCTGAGGGGATCAAGCAACAGATTATAAGGATTGGTATTCG GGAGACTAGTCAATCCGGAGGGGATTAAACAACAGATTTTGCGAGTCGGTATTCG GGAGACTAATCAATCCTGAGGGGATTAAACAACAGATTTTGCGAGTCGGTATTCG GGAGACTAGTCAATCCTGAGGGGATTAAACAACAGATTTTGCGAGTCGGTATTCG GCAGACTGGTTAATCCCGAGGGAATCAAACAGCAGATTATGAGGATAAG GCAGGCTTGTGAATCCGGAAGGGATAAAACAACAAATAATGAGGATAGGAATCCG **

Hendra CCATG 6343 Nipah CCACG 6343 Niniventer GAC-- 6056 Berylmys TGC--6020 Gierle CAT--6044 Feline 6087 AAA--Dolphin CCT--6011

Saiga_antelope, TTT--6011 Goitered_gazelle, TTT--6011 Domestic_sheep, TTT--6011 Wild_goat, TTT--6011 Bharal, 6011 TTT--Domestic_goat, TTT--6011 Measles

6033

AAT--

Rinderpest

CCA-- 6011 Phocine_distemper_north_sea ATT-- 6033 CACCAGGACTTGTGAGCCATATATTATCAGAGAAACAGAAAGGTTGTATTCAATC

CACCTGGACTTATAGGTCACATCCTATCCATTAAGCAACTAAGCTGCATACAAGC

TCCCCGGTTTAGTCGGACATATATTATCCATCAAGCAGCTCAATTGCATACAAAG

CACCTGGGTTAGTTGGGCATATCCTATCAACAAGCAGACAACATGTATTCAATC

alignments.txt

Gierle

GAAAA

6160

Phocine_distemper_caspian_sea,

71

GTGCAGAGAAATATCTACTTGCTACAGGGTTAAGCCTTAACGGGCCAAAATGTTT

TTT--6011 CACCCGGGTTGGTAGGGCACATCCTTTCATCAAAGCAGACAGCATGTGTGCAGTC Dog_canine_distemper TTT--6011 Ferret, CACCCGGGTTGGTAGGGCACATCCTTTCATCAAAGCAGACAGCATGTGTGCAGTC TTT--6011 Porcine CACCTGGATTGGTATGTCATATCCTCTCCAGAAAACAAGACACGTGTGTCCAAGC CTA--6011 Phyllostomus CACCTGGGCTCATATGTCACATCCTTGCCCGAAAACAAAACACATGTATCCAGTC ATG--6011 ** AAGATCTAGTGAAACACTATCAGGTCGAACAACCGTTTTTTGTTCCTAGTCATAT Hendra 6403 CACAT Nipah CACTA 6403 ----TATTGGGTCACCCTTTATTGCTGGACGACCGAACAGTTACCTTAAAAGATT Niniventer AACTG 6112 Berylmys TACAG 6076 Gierle TACTA 6100 Feline ----TTATGGACTGTGCTTGTCAGACGGACAAAAGTGATTACCTGTCATCAAT TACAA 6143 ---TATTGGACTCCCTGTTCAGAAAGGATTCTTTAATAGAGTGTTGAGTGGGTT Dolphin 6067 GACCC ----CTTGGGTGATCCTTATATCCAAGGAGACTTCAATAAGCACCTTAAATCTCT Saiga_antelope, 6067 AACCT ----CTTGGGTGATCCTTATATCCAAGGAGACTTCAATAAGCACCTTAAATCTCT Goitered_gazelle, AACCT 6067 ----CTTGGGTGATCCTTATATCCAAGGAGACTTCAATAAGCACCTTAAATCTCT Domestic_sheep, AACCC 6067 Wild_goat, ----CTTGGGTGATCCTTATATCCAAGGAGACTTCAATAAGCACCTTAAATCTCT AACCC 6067 Bharal, ----CTTGGGTGATCCTTATATCCAAGGAGACTTCAATAAGCACCTTAAATCTCT **GACCC** 6067 Domestic_qoat, ----CTTGGGTGATCCTTATATCCAGGGAGACTTCAATAAGCACCTTAAATCTCT AACCC 6067 Measles ---TGTGGGAGGCGCAGTTAGTAGAGGTGATATCAACCCTATTCTGAAAAAACT TACAC 6089 Rinderpest ----GCCGGGCCAGCTATCACTAGAGGTGAGATAAACCCGATATTAAGAAAGCT CACAC 6067 Phocine_distemper_north_sea ----ACATGGGCCTCCTTTTCACAATAGATCTCTGAACCCTTACCTAAGAAGCTT GACGT 6089 Phocine_distemper_caspian_sea, ----GCACGGACCTCCATTTCATGCTGAATCCTTCAATCCTCACCTCCAGGGTTT AACAA 6067 Dog_canine_distemper ----GCATGGACCTCCATTTCATGCTAAATCTTTCAATCCTCACCTTCAGGGTTT 6067 AACAA Ferret, ----GCATGGACCTCCATTTCATGCTAAATCTTTCAATCCTCACCTTCAGGGTTT AACAA 6067 Porcine ----CATGGGAGTACCGTTTACCAACGAAGGGTTCAATCCTAATCTGAGGTCCCT 6067 AACAC Phyllostomus ---TCTAGGTTCCCCTATCACAAATGAGGGATTTAACATTAATTTAAAATCACT TACCC 6067 * * Hendra GTGATGAAAAGTTGCTTATGCAGGCTGGTTTGAAAATGAACGGACCAGAAATCTT 6463 GAAGA GTGATGAACAAGTACTTCTCCAAGCAGGGCTGAAACTCAATGGGCCAGAAATTCT Nipah TAAGA 6463 Niniventer ATATTGATAAACTTCTGATTGCAGCAGGGCTCGAGTTCAATGGGATTAAGTCTGT CAAAA 6172 Berylmys ATATTGAAAAGTATCTGATGAAGGCAGGATTGGAATTAAATGGACCCAAGTGCTT AAAGA 6136

TCGGA

6127

Feline 6203 ACAGC Dolphin 6127 TAAGA Saiga_antelope, TAGAG 6127 Goitered_gazelle, TAGAG 6127 Domestic_sheep, TAGAG 6127 Wild_goat, TAGAG 6127 Bharal, TAGAG 6127 Domestic_goat, TAGAG 6127 Measles CAAAG 6149 Rinderpest CAGTG 6127 Phocine_distemper_north_sea CAAGA 6149 Phocine_distemper_caspian_sea, TAAGA 6127 Dog_canine_distemper TAAGA 6127 Ferret, 6127 TAAGA Porcine TCGCA 6127 Phyllostomus

AAATAGAGAACGTTCTTCTGTCATGTGGGTTAGAATTGAATGGACCTAAGATTAT CGATTGAAAAAGTTCTTATTAATTGCGGGTTAACTGTGAACGGGCCCAAGGTATG CTATTGAGAAAATCCTGGTAAATTGTGGTCTCTCGATCAATGGCATAAAAATCTG CTATTGAGAAAATCCTGGTAAATTGTGGTCTCTCGATCAATGGCATAAAAATCTG CTATTGAGAAAATCCTGGTAAATTGTGGTCTCTCGATCAATGGCACAAAAATCTG CTATTGAGAAAATCCTGGTAAATTGTGGTCTCTCGATCAATGGCACAAAAATCTG CTATTGAGAAAATCCTGGTAAATTGTGGTCTCTCGATCAATGGCACAAAAATCTG CTATTGAGAAAATCCTGGTAAATTGTGGTCTCTCGATCAATGGCACAAAAATCTG CTATAGAGCAGGTGCTGATCAGTTGCGGGTTGGCAATTAACGGACCTAAACTGTG CTATCGAGCGTATTCTGATCAGCTGCGGGCTTACCATCAACGGCACAAAGATTTG GCATAGAGAAAGTGTTAATCAATTGTGGGCTTACAATTAATGGCCTAAAGGTGTG GTATTGAGAAGGTATTAATCAATTGTGGGCTTACAATTAATGGTCTTAAGGTATG GTATTGAGAAGGTATTAATCAATTGTGGGCTTACAATTAATGGTCTTAAAGTATG GTATTGAGAAGGTATTAATCAATTGTGGGCTTACAATTAATGGTCTTAAAGTATG CTATTGAGAAAGTCTTGGTGAACTGTGGTTTTTCTGTCAATGGAGACAAGGTCTG ATGTAGAGAAATTGCTAGTTAACTGCGGCTTCTCCATCAATGGAGACAAGGTATG * ** **

Hendra TATCT 6523 Nipah AATTA 6523 Niniventer ATCTT 6232 Berylmys 6196 AAGTC Gierle AGGGT 6220 Feline GATAT 6263 Dolphin TATTT 6187 Saiga_antelope, TATTT 6187 Goitered_gazelle, TATTT 6187 Domestic_sheep, 6187 TATTT Wild_goat, TATTT 6187 Bharal, TATTT 6187 Domestic_goat, 6187 TATTT Measles CATCC 6209 Rinderpest CATTC 6187 Phocine_distemper_north_sea AATTC 6209

Phocine_distemper_caspian_sea,

ATGAAGTGGGATATGATATAGGATCAGATATCAATACACTCAGGAGCACTATTAT GTGAAATCAGTTATGATATCGGTTCAGATATCAATACATTAAGAGACACCATCAT AGATTGGTCATTATGATATTCATTCAAAAGAACAAGGACTTAAATCAAGTATAAT AATTATCAGGACATGACTATGCTAATGGGGAGACTAGTCTAGAATCAAGTATAAT ACTTAGTACATCATGATATCGCGTCTGGATCAGAGGGTCTTGTCAACTCAACTGT ATCTAATCCACCATGATATCGCCTCCGGTCCAGACGGCCTTATGAGCTCTACAAT ATCTAATCCACCATGATATCGCCTCCGGTCCAGACGGCCTTATGAGCTCTACAAT A TCTA A TCCA CCA TGA TA TCGCCTCCGGTCCA GA CGGTCTTA TGA GCTCTA CA A T ATCTAATCCACCATGATATAGCCTCCGGTCCAGACGGTCTTATGAGCTCTACAAT ATCTAATCCACCATGATATCGCCTCCGGTCCAGACGGTCTTATGAGCTCTACAAT ATCTAATCCACCATGATATCGCCTCCGGTCCAGACGGTCTTATGAGCTCTACAAT AATTAATCCACCATGATGTTGCCTCAGGGCAAGATGGATTGCTTAACTCTATACT ATGTAGTCCACCATGATATATCATCAGGGCCGGACGGTCTGCTTAATTCTTCTAT ATCTGTTCCATCATGACATCTCATCAGGTGAAGAAGGGCTAAAAGGTTCAATTAT ACCTGCTTCACCATGATATTTCGTCAGGCGAGGAAGGGCTGAAAGGATCTATCAC

Gierle

GAAAA

Feline

6340

GATCC 6187 ACCTGCTTCACCATGATATTTCGTCAGGCGAGGAAGGGCTGAAAGGATCTATCAC Dog_canine_distemper 6187 GATCC ACCTGCTTCACCATGATATTTCGTCAGGCGAGGAAGGGCTGAAAGGATCTATCAC Ferret, GATCC 6187 Porcine $\tt CTCTGCTACATCATGATATAGTGTCAGGGTGCGAAGGTTTAACAAATGCAGTGAT$ AATCC 6187 Phyllostomus GTCTGCTACACCATGACGTAATCTCTGGCTGTGACGGTTTAACCAATGCTATTAT TATTC 6187 ** Hendra TACTTAATGAAGCTATGAACTATTTTGACGATGAGAGGAGTCCTTCTCATCATCT AGAGC 6583 Nipah TGTTAAATGAGGCTATGAATTATTTTGATGACAACAGATCACCTTCACACCACCT AGAAC 6583 TATGTAAGGAATTATTAATTACGATTGATCCGGCCAGAGTAACTGGCAGTTCATT Niniventer TCAAC 6292 TTTTTAAAGAATTAGCAGTTATGATTGACCCTACTAGAAACATTCAATCCATTTT Bervlmvs CCAGC 6256 Gierle TGTTTAAAGAGCTGGCAGTTCTGCTAGATCCTACTCGAAGTCAGAATTCAATATT CCAAC 6280 Feline TAGTTAGAGAATATCTTAATGCAACTATACAAGGCCGGGAAACATTAGGCTTGTT TTCAC 6323 Dolphin TATACAAAGAATTGGCAAGGTTTAAGGAAAACACAAGGAGTCAACAAGGCATGTT TCACG 6247 TATATAGGGAATTGGCTCATTTCAAAGATAATATAAGGAGTCAGCACGGAATGTT Saiga_antelope, CCACC 6247 TATATAGGGAATTGGCTCATTTCAAAGATAATATAAGGAGTCAGCACGGAATGTT Goitered_gazelle, CCACC 6247 TATATAGGGAGTTGGCTCATTTCAAAGATAATATAAGGAGTCAGCACGGAATGTT Domestic_sheep, CCACC 6247 Wild_goat, TATATAGGGAGTTGGCTCATTTCAAAGATAATATAAGGAGTCAGCACGGAATGTT CCACC 6247 TATATAGGGAATTGGCTCATTTCAAAGATAATATAAGGAGTCAGCACGGAATGTT Bharal, CCACC 6247 Domestic_goat, TATATAGGGAATTGGCTCATTTCAAAGATAATATAAGGAGTCAGCACGGAATGTT CCACC 6247 Measles TCTACAGGGAGTTGGCAAGATTCAAAGACAACCAAAGAAGTCAACAAGGGATGTT CCACG 6269 Rinderpest TGCTCAAGGAGTTGGCCAGATTCAGGGATAATCAAAGGAGTCAGCAGGGGATGTT CCATG 62.47 Phocine_distemper_north_sea TTTATAGGGAGCTTGCACGGTTCAAAGATAATTATCAGACTTCGCATGGGATGTT CCACG 62.69 Phocine_distemper_caspian_sea, TTTACCGGGAACTCGCAAGGTTCAAGGATAACCACCAATCTTCACATGGAATGTT CCATG 6247 Dog_canine_distemper TTTACCGGGAACTCGCAAGGTTCAAGGATAACCACCAATCTTCACATGGAATGTT 6247 CCATG Ferret, TTTACCGGGAACTCGCAAGGTTCAAGGATAACCACCAATCTTCACATGGAATGTT CCATG 6247 Porcine TATATCGAGAGCTGGCAAGGTTTAAGGAAATCCATACGACATCCCATGGGATCTT 6247 TCATG Phyllostomus TGTATAAAGAACTAGCAAGGTTCAGAGAGATCCATCTCACCTCACATGGTATTTT CCATG 6247 * * Hendra CCTTTCCAGTCCTAGAGAAAACGAGAGTCAAAACTATCATGGGGAGAGTCACGAG AAAAG 6643 CCTATCCAGTTTTGGAGAGAACTAGAATTAAAACAATAATGAATTGTGTGACTAA Nipah AAAAG 6643 Niniventer CATATCCAATTCTAGAAATGTCTAGAGTCAGGGAACTTGTTTACGCCATAGCGGT TAAAC 6352 Berylmys ATTATCCTGTACTTATGAAGTCCCGTGTGAGAGAACAAATGACTCAGATTGCAAA AAAGG 6316

ATTATCCTGTCCTGTACAAGAGCAGAATTAGAGAGCATATGAGTCAAATTGCCAA

CTTACCCAGTCTTACATGAGAGTCAGTTAAGAGAAATTAATAAGTGTATTGCATT

Phocine_distemper_caspian_sea,

GATTG 6361

GAAAT 6383 CTTATCCGGTTCTTGCAGATAGTAGGCAAAGAGAATTAGTATCCAGAATCGCTAG Dolphin 6307 GAAGT CCTACCCGGTACTGGCCAACAGCAGCAACGTGAATTAATCCTTCGAATAGCCAA Saiga_antelope, GAAAT 6307 Goitered_gazelle, CCTACCCGGTACTGGCCAACAGCAGCAACGTGAATTAATCCTTCGAATAGCCAA GAAAT 6307 Domestic_sheep, GAAAT 6307 Wild_goat, CCTACCCAGTACTGGCCAACAGCAGGCAACGTGAATTAATCCTTCGAATAGCCAA GAAAT 6307 Bharal, CCTACCCAGTACTGGCCAACAGCCGGCAACGTGAATTAATCCTTCGAATAGCCAA GAAAT 6307 CCTACCCAGTGCTGGCCAACAGCAGCAACGTGAATTAATCCTTCGAATAGCCAA Domestic_qoat, GAAAT 6307 CTTACCCCGTATTGGTAAGTAGTAGGCAACGAGAACTTGTATCTAGGATCACTCG Measles CAAAT 6329 $\tt CTTACCCCGTTCTGCTGAGCAGCAGCAGCGTGAACTGATCTCCAGGGTTGCTAG$ Rinderpest AAAGT 6307 Phocine_distemper_north_sea CCTACCCAGTGCTAGCGACAGCCAGGAACGGGAACTTGTGTCTATAATAGCTAG GAAAT 6329 Phocine_distemper_caspian_sea, GAAGT 6307 Dog_canine_distemper GAAGT 6307 Ferret, GAAGT 6307 CATACCCAGTGCTAATTGAGAGTCAACAGCGGGAGTTAATACTAGATATCACCAG Porcine AAAGA 6307 CTTATCCCGTCTTGATTGAGAGCCAGCAACGAGAATTGATCCTTGATATCACCCG Phyllostomus AAAA 6307 TAACTGTTTATTCTCTTATAAAGTTGAAGGAAACTAAAAGCCCGGAACTTTATAA Hendra 6703 CATCA Nipah TGATTGTCTACTCACTTATCAAGTTCAAGGACACCAAAAGCTCAGAACTTTATCA CATCA 6703 Niniventer ACTTCTTGTATATACTCTTTTATGATAAAAATCCA----CAAGCAATCCAGAA AATAC 6406 Berylmys TGTTCATTTATTTTGTCTTTTTCTATTGATGATGAA----GCTATAAACCGAGA TTTAG 6370 Gierle TGTTCATATATAACCTATTTGTCCTTAGGTCTCCA----GATGTATGTAGATC AACCA 6394 Feline ATGTTGTATATCTACTCTTTTATTCAAGCTCTACA----TTATCTAGTAAACA AATAA 6437 ATTGGGGGTATATTATACTGTATTCAACAGAACAG-----GGGGCGCTCAATCA Dolphin ATTGG 6361 Saiga_antelope, TCTGGGGGTATGTCTTGCTATATTCTGATGACCCG-----GCACTAATCAGACA AACAA 6361 Goitered_gazelle, TCTGGGGGTATGTCTTGCTATATTCTGATGACCCG-----GCACTAATCAGACA AACAA 6361 Domestic_sheep, TCTGGGGGTATGTCTTGCTATATTCTGATGACCCG-----GCACTAATCAGACA 6361 AACAA Wild_goat, TCTGGGGGTATGTCCTGCTATATTCTGATGACCCG-----GCACTAATCAGACA AACAA 6361 Bharal, TCTGGGGGTATGTCTTGCTATATTCTGATGACCCG-----GCACTAATCAGACA AACAA 6361 TCTGGGGGTATGTCTTGCTATATTCTGATGACCCG-----GCACTAATCAGACA Domestic_goat, AACAA 6361 TTTGGGGGCATATTCTTCTTTACTCCGGGAACAGA-----AAGTTGATAAATCG Measles 6383 GTTTA Rinderpest TTTGGGGTTACATTCTCTTATACTCCAGCGATAGG----AGACTACTAAGTAG GCTGG 6361 Phocine_distemper_north_sea ATTGTGGCTATATTATGCTCTATTCAGAAGACATT----TATGAATTATCTAA GATTG 6383

ACTGTGGCTATATTTTGCTTTACTCGGGAGACTTA----TACGAAATTACCAG

Dog_canine_distemper ACTGTGGCTATATTTTGCTGTACTCGGGCGACTTA----TACGAAATTACCAG GATTG 6361 ACTGTGGCTATATTTTGCTTTACTCGGGAGACTTA----TACGAAATTACCAG Ferret, GATTG 6361 Porcine TAACCGGCCATATTATCCTGTACTCTAGTAATCTC----ACTGACATTGCTCA AGTAA 6361 Phyllostomus TTGTCGGGCATTCTATCCTGTATTCTAGAAACCTG----ATCACACTTATCCA AGTGA 6361 Hendra AAAATTACATAAGGAGAAAAGTTTTGATTCTAGACTTCAGATCCCATACTATGAT TAAAC 6763 Nipah AAAATAACATCAGAAGAAAAGTTCTAATCTTAGATTTCAGATCGAAGCTCATGAC AAAGA 6763 Niniventer TGAGGGATTTAAAACAAGGGTTGTTGATTATGGATATTACAAATAATACTTTAGA 6466 AAGAT TTTCAAACCTCAAAAAAGGGGTAATTATATTGGATATTGATAATAGATATATTCA Berylmys GGATT 6430 Gierle TAAATGATCTCAGAAGGGGAGTGATTGTATTAGACATGGATCATTACGCAGTTAC AGGGC 6454 Feline TGAGTAATCTTAGAAAGGGAATATTGATGTATGAGTTTTGAGAGATGAATTTTTCAT ATCAA 6497 Dolphin TAAGAAATCTTAAAGCGGGCTACTTATTATTTGATGTTCATCACAATTTTCTCGT CAAGA 6421 TCAAGAACTTGAAACGGAATCATCTAACCTTTGACTTACATAGTAACCCATTTAT Saiga_antelope, TAAAG 6421 TCAAGAACTTGAAACGGAATCATCTAACCTTTGACTTACATAGTAACCCATTTAT Goitered_gazelle, TAAAG 6421 TCAAGAACTTGAAACGGAATCATCTAACCTTTGACTTACATAGTAACCCGTTTAT Domestic_sheep, 6421 TAAAG Wild_goat, TCAAGAACTTGAAACGGAATCATCTAACCTTTGACTTACATAGTAACCCGTTTAT TAAAG 6421 Bharal, TCAAGAACTTGAAACGGAATCATCTAACCTTTGACTTACATAGTAACCCGTTTAT 6421 TAAAG TCAAGAACTTGAAACGGAATCATCTAACCTTTGACTTACATAGTAACCCGTTTAT Domestic_goat, TAAAG 6421 Measles TCCAGAATCTCAAGTCCGGTTATCTAGTACTAGACTTACACCAGAATATCTTCGT 6443 TAAGA Rinderpest TGAGTAATCTCAAGTCTGGATACCTTTTGTTTGATCTTCATCAGAACTTGTTCAT GAAAA 6421 Phocine_distemper_north_sea TACGAAATCTGAAATCTAATCATATAATATTTGATTTACATCATAATCTGTTTAT GGAGA 6443 Phocine_distemper_caspian_sea, GGATA 6421 Dog canine distemper TCCGAAACCTGAAAGCCAACCACATAATTTTCGACCTGCATCGTAATTTATTCAT 6421 GGATA Ferret, TCCGAAACCTGAAAGCCAACCACATAATTTTCGACCTGCATCGTAATTTATTCAT GGATA 6421 Porcine TCAAGAACCTCAAATCCGGATATTTAACGATTGATCTATTCCAAAACCAATTCAC GAGAA 6421 Phyllostomus TCAGGAACCTAAAATCCGGGTATATTACGATTGATCTTTATCAAAACCAATTCAC 6421 TCAGA Hendra TGCTACCTAAAGGAATGAAAGAGAGAGAGAGAAAAGCGGATTCAAAGAAATTTG GATAT 6823 Nipah

75

CTCTACCTAAAGGGATGCAAGAGAGAAGAAAAAAACGGTTTCAAAGAAGTTTG GATAG 6823 ACCTACCTCCATTTTTATATAAAAGTTTGGCAATTAAGATTCCAAGAAGATCATG Niniventer GATGT 6526 Berylmys TAATCCCTAATTTTATTAAGAAAGTTATATTGTCAAATTTAGGACAGAAGGTTTG 6490 GATAG Gierle TCATCCCACGATTTATTAGAAAGATCATTAACTCCTCTCTAGGACAAAAAGTCTG GATTA 6514 Feline GATTGTCAGCAAATTACAAGAAAAAGGTGATGTCACAAGAAGTCAAAACTACCTG GATCT 6557

Dolphin 6481 GTTAT Saiga_antelope, GTTGT 6481 Goitered_gazelle, GTTGT 6481 Domestic_sheep, GTTGT 6481 Wild_goat, GTTGT 6481 Bharal, GTTGT 6481 Domestic_goat, GTTGT 6481 Measles GGTTT 6503 Rinderpest GCTTT 6481 Phocine_distemper_north_sea GTTAT 6503 Phocine_distemper_caspian_sea, GCTCT 6481 Dog_canine_distemper GCTCT 6481 Ferret, GCTCT 6481 Porcine GGTGT 6481 Phyllostomus GATGT 6481 6883

Hendra TTTAG Nipah TATTA 6883 Niniventer CCTCA 6586 Berylmys GATTT 6550 Gierle GATCT 6574 Feline AATAA 6617 Dolphin CCTCA 6541 Saiga_antelope, ACTCA 6541 Goitered_gazelle, ACTCA 6541 Domestic_sheep, 6541 ACTCA Wild_goat, 6541 ACTCA Bharal, ACTCA 6541 Domestic_goat, ACTCA 6541 Measles 6563 TCTGA Rinderpest ACTCA 6541 Phocine_distemper_north_sea ACTGA 6563 Phocine_distemper_caspian_sea, ACTGA 6541

Dog_canine_distemper

ATCTTTCCAAATCCGAAAGGGTCTTAATACGGACTCTTATCCCACGGAGAGAGTG GGCTATCCAAGGCTGAGAAACTGCTGGTGCGGACGAGTTCACTAAGAAGAGAATG GGCTATCCAAGGCTGAGAAACTGCTGGTGCGGACGAGTTCACTAAGAAGAGAATG GGCTATCCAAAGCTGAGAAACTGCTGGTGCGGACGAGTTCACTAAGAAGGGAATG GGCTATCCAAAGCTGAGAAACTGCTGGTGCGGACGAGTTCACTAAGAAGGGAATG GGCTATCCAAAGCTGAGAAACTGCTGGTGCGGACGAGTCCACTAAGAAGGGAATG GGCTATCCAAAGCTGAGAAACTGCTGGTGCGGACGAGTTCACTAAGAAGGGAATG ATCTATCCAAGTCAGAGAAACAGATTATTATGACGGGGGGTTTAAAACGTGAGTG ACCTGTCAAAGTCTGAGAAGCAGCTGATCAGAACAGGAGGGCTCAAGCGTGAGTG ATTTGTCTAGATTTGACCGATCTCTTATCTTTAGCACAATCCCAAAAAGAGATTG ATCTGTCCAGATCTGACAGGTCTCTCATCCTAACGACAATCCCCAAAAAGAATTG ATCTGTCCAGATCTGACAGGTCTCTCATCCTAACGACAATCCCCAAAAAGAATTG ATCTGTCCAGATCTGACAGGTCTCTCATCCTAACGACAATCCCCAAAAAGAATTG ACATCTCCAAGTCGGATCGTGCACTGATTCGGGGAACAATAGCTCGCAGGAACTG ACCTCTCTAAGTCTGACCGGGCATTAATCAGGGCAACTATCGCCCGTCGGGATTG

TTGACTTATCTAATAGGGAAGTCAAAATCTGGTGGAAGATCATAGGTTACCTCTC

TAGATTTATCGAATCGAGAAGTTAAAATCTGGTGGAAGATAATCGGATACATATC TTACACTAGATGCTGCGGCATGTAAAGATTTTTATAAAGTAGTAGGATCCTCTAG TGCACTTAACCACTGCTGAGATCAAGGAATGTTTTAAGATACTGGGGTACTCGAT CCACCTTACAAACCTCACACACATCAAACCATTCTTTAACCTCATACCCTATCCTATTTAATCTTGATACTCCGACACGAAAAGCATTATATAAGTTAGTAGGTTATTCATT TTAAGCTTGAGACAAGTGAGATAAAGGAGTGGTTTAAGTTGATAGGGTACGGTGC TCACTCTCGAAACGAAAGAAGTAAAAGAGTGGTTCAAATTGGTAGGTTACAGTGC TCACTCTCGAAACGAAAGAAGTAAAAGAGTGGTTCAAATTGGTAGGTTACAGTGC TCACCCTCGATACGAAAGAAGTGAAAGAGTGGTTCAAATTGGTAGGTTACAGTGC TCACTCTCGATACGAAAGAGTGAAAGAGTGGTTCAAATTGGTAGGTTACAGTGC TCACTCTCGATACGAAAGAAGTGAAAGAGTGGTTCAAATTGGTAGGTTACAGTGC TCACTCTCGATACGAAAGAGTGAAAGAGTGGTTCAAATTGGTAGGTTACAGTGC TTAAGGTAACAGTCAAGGAGACCAAAGAATGGTACAAGTTAGTCGGATACAGCGC TTAAACTCACTACGAAAGAGATCAAAGAGTGGTTCAAGCTAATAGGTTACAGTGC TTCAATTGGAGACTAAAGAAATTAAGGAATGGTTCAAATTGCTAGGTTATAGTGC TTCAGCTTGAGACAAAAGAGATAAAGGAGTGGTTCAAATTGTTAGGTTATAGTGC TTCAGCTCGAGACAAAAGAGATAAAGGAGTGGTTCAAATTATTAGGTTATAGTGC

alignments.txt Wed Dec 18 0	7:53:28 2024 77
ACTGA 6541 Ferret,	TTCAGCTCGAGACAAAAGAGATAAAGGAGTGGTTCAAATTATTAGGTTATAGTGC
ACTGA 6541 Porcine	TTCACCTTGAGACAAAAGAAATCAAAGAGTGGTTTAAATTAGTGGGGTATAGTGC
TCTGA 6541 Phyllostomus	TTCGTTTAGAAACCAAGGAAATCAAGGAGTGGTTTAAACTAGTCGGGTACAGTGC
CCTTA 6541	* ** * * * * * *
*	
Hendra 6906	TCTGAATCGAACTACCACACCCA
Nipah 6906	TCTGATTTAACCTTCCAAATCCA
Niniventer	TTTAA
Berylmys	ATAATCTGTAA
6561 Gierle	ACCTCTAG
6582 Feline	TTAATCATGTATGATGATAGAGTATGATTATCCATCTTTAAAAGAGTAAGAT
AATAT 6674 Dolphin	TCAGAGAGTAA
6552 Saiga_antelope,	TCAGAGGCTAG
6552 Goitered_gazelle,	TCAGAGGCTAG
6552 Domestic_sheep,	TCAGAGGCTAG
6552 Wild_goat,	TTAGAGGCTAG
6552 Bharal,	TCAGAGGCTAG
6552 Domestic_goat,	TCAGAGGCTAG
6552 Measles	TTAAGGATTAATTGGTTGAACTCCGGAACCCTAATCCTGCCCTAGGTAGTTAGGC
ATTAT 6623	TTCGGGAGTGA
Rinderpest 6552	
Phocine_distemper_north_sea GCGAT 6623	TTAGAAATTCCTAGTAAGCTAACCGGCCTCCTCCACCCCCTCTTCTGATCTCTGT
Phocine_distemper_caspian_sea, 6555	TTAGAAATCACTAA
Dog_canine_distemper 6555	TTAGAAATCACTGA
Ferret, 6555	TTAGAAATCACTGA
Porcine 6552	TTCGAGAGTGA
Phyllostomus 6552	TCAGTGAATGA
Hendra	TCACCAATGAAGCCCGAACAAGTCTACATAG
ATCAG 6942 Nipah	AGACCAACTGATAACTTATGTTGATCTAAGG
TTCAG 6942 Niniventer	
6591 Berylmys	
6561 Gierle	
6582	
Feline CACGC 6734	CAGATGTATGATAACCAATTAAGTATTACTTTTGAATTGAAAGGTTGCTCAATTA
Dolphin	

alignments.txt Wed Dec 18 07	:53:28 2024 78
6552 Saiga_antelope,	
6552 Goitered_gazelle,	
6552 Domestic_sheep,	
6552	
Wild_goat, 6552	
Bharal, 6552	
Domestic_goat, 6552	
Measles 6643	TTGCAATATTAAAGAAAA
Rinderpest 6552	
Phocine_distemper_north_sea	AAAATTA-GACTAAAAAAAA
6642 Phocine_distemper_caspian_sea,	
6555 Dog_canine_distemper 6555	
Ferret,	
6555 Porcine	
6552 Phyllostomus	
6552	
Hendra 5	TTATTAAGAAAAA 695
Nipah	TTATTAAGAAAAA 695
5 Niniventer	659
1 Berylmys	656
1 Gierle	658
2 Feline	TTTTTTAGTAATCGGGTTTTTATTCCAATTAGGGCAATTAGAAAAAA 678
1	
Dolphin 2	655
Saiga_antelope, 2	655
<pre>Goitered_gazelle, 2</pre>	655
Domestic_sheep, 2	655
Wild_goat, 2	655
Bharal,	655
2 Domestic_goat,	655
2 Measles	664
3 Rinderpest	655
2 Phocine_distemper_north_sea	664
2 Phocine_distemper_caspian_sea,	655
5	655
Dog_canine_distemper 5	633

alignments.txt	Wed Dec 18	07:53:28	2024	79	
Ferret,					 655
5					
Porcine					 655
2					
Phyllostomus					 655
2					