

	..... .....	..... .....	..... .....	..... .....	..... .....	..... .....
	5	15	25	35	45	55
SNV NM H10	tagtagtaga	ctccttgaga	agctactacg	actaaagctg	gaatgagcac	cctcaaagaa
RIOMV HTN-	tagtagtaga	ctccttgaga	agctactatt	acataagctg	tgatgagcaa	cctccaagaa
LANV 510B	tagtagtaga	ctccttgaga	agctactatt	acataagctg	tgatgagcaa	cctccaagaa
CHOV 588	tagtagtaga	ctccttgaga	agctactatg	actaaagctg	gaatgagcac	cctcaaagaa
JABV AKM96	tagtagtaga	ctccttgaga	agctactact	acgtaagctg	aatgagcaa	cctccaagac
MAPV HV-97	tagtagtaga	ctccttgaga	agctactgct	acaaaagctg	tgatgagcaa	cctccaagaa
JUQV oln19	tagtagtaga	ctccttgata	agctactact	gcaaaagctg	gaatgagcaa	cctccaagac
JUQV LH	tagtagtaga	ctccttgata	agctactact	acaaaagctg	gaatgagcaa	cctccaagac
PERV 14403	tagtagtaga	ctccttgaga	agctactact	gcaaaagctg	gaatgagcac	cctccaagaa
MACV 13796	tagtagtaga	ctccttgata	agctactgct	gtaaaagctg	gaatgagcaa	cctccaagaa
ORNV O1229	tagtagtaga	ctccttgaga	agctactact	gcgaaagctg	gaatgagcac	cctccaagaa
ORNV AND N	tagtagtaga	ctccttgaga	agctactact	gcgaaagctg	gaatgagcac	cctccaagaa
LECV BMJ-N	--gtagtaga	ctccttgaga	agctactact	gcgaaagctg	gaatgagcac	cctccaagaa
LECV BMJ-O	-agtagtaga	ctccttgaga	agctactact	gcgaaagctg	gaatgagcac	cctccaagaa
LECV Plata	tagtagtaga	ctccttgaga	agctactgct	gctaaagctg	gaatgagcac	cctccaagaa
LECV CO22-	tagtagtaga	ctccttgaga	agctactact	gcgaaagctg	gaatgagcac	cctccaagaa
LECV BA18-	-----	--ccttgaga	agctactact	gcgaaagctg	gaatgagcac	cctccaagaa
LECV BA18-	-----	-----	-----t	gcgaaagctg	gaatgagcac	cctccaagaa
LECV ER19-	----agtaga	ctccttgaga	agctactact	gcgaaagctg	gaatgagcac	cctccaagaa
LECV 22819	tagtagtaga	ctccttgaga	agctactact	gcgaaagctg	gaatgagcac	cctccaagaa
BAV BA10-A	-----	-----	-----	---aaagctg	gaatgagcac	cctccaagaa
BAV BA16-L	-----	-tccttgaga	agctactact	gcaaaaagctg	gaatgagcac	cctccaagaa
BAV BA02-C	-----	-----	-----	---aaagctg	gaatgagcac	cctccaagaa
BAV BA17-S	-----	-----	-----	-----	-----ac	cctccaagaa
BAV BA11-A	-----	-----	-----	-----	--atgagcac	cctccaagaa
BAV BA02-C	----gtaga	ctccttgaga	agctactact	gcaaaaagctg	gaatgagcac	cctccaagaa
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BAV BA02-C	-----	---ccttgaga	agctactact	gcaaaaagctg	gaatgagcac	cctccaagaa
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ANDV CHI-9	cagtagtaga	ctccttgaga	agctactgct	gcgaaagctg	gaatgagcac	cctccaagaa
ANDV AREB1	tagtagtaga	ctccttgaga	agctactgct	gcgaaagctg	gaatgagcac	cctccaagaa
ANDV Epuye	-----	ctccttgaga	agctactgct	gcgaaagctg	gaatgagcac	cctccaagaa
ANDV Epili	-----taga	ctccttgaga	agctactgct	gcgaaagctg	gaatgagcac	cctccaagaa
ANDV NRC-2	-----	ctccttgaga	agctactgct	gcgaaagctg	gaatgagcac	cctccaagaa
ANDV NRC-4	-----ga	ctccttgaga	agctactgct	gcgaaagctg	gaatgagcac	cctccaagaa
ANDV NRC-6	tagtagtaga	ctccttgaga	agctactgct	gcgaaagctg	gaatgagcac	cctccaagaa

	..... .....	..... .....	..... .....	..... .....	..... .....	..... .....
	65	75	85	95	105	115
SNV NM H10	gtgcaagaca	acatcactct	ccacgaacaa	caactcgtga	ctgccaggca	gaagctcaaa
RIOMV HTN-	gtacaggaag	gtatcactct	tcatgaacaa	cagcttggtg	cagcccgcc	gaagcttaag
LANV 510B	gtacaggaag	gtatcactct	tcatgaacaa	cagcttggtg	cagcccgcc	gaagcttaag
CHOV 588	gtgcaggaaa	atatcaccct	acatgaacag	cagcttggtg	ctgcacggca	aaagcttaaa
JABV AKM96	gtgcaagaaa	acatcacact	acacgagcag	cagctcgtga	ctgctcgtca	aaagcttaaaa
MAPV HV-97	atacaggaaa	acatcacagt	acacgaacag	caattagttg	ctgctcggca	aaaacttaaa
JUQV oln19	attcaagata	gtatcacagt	acacgaacaa	cagctcgtga	ctgccaggca	aaaacttaaa
JUQV LH	atccaagaca	gcatcacagt	acacgaacaa	cagctcgtga	ctgccaggca	gaagcttaaa
PERV 14403	ttgcaggaaa	atatcaccgc	acacgaacaa	catctcgtca	ctgccaggca	gaaacttaaa
MACV 13796	ttgcaagaga	atatcactgc	acacgaacaa	caactcgtga	ctgccaggca	gaagctgaaa
ORNV O1229	ctacaggaaa	atatcacagc	acacgaacaa	cagctcgtga	ctgctcggca	aaagcttaaa
ORNV AND N	ctacaggaaa	atatcacagc	acacgaacaa	cagctcgtga	ctgctcggca	aaagcttaaa
LECV BMJ-N	ttacaagaaa	acatcacagc	acacgaacag	cagctcgtga	ctgctcggca	aaagcttaaa
LECV BMJ-O	ttacaagaaa	atatcacagc	acacgaacaa	cagctcgtga	ctgctcggca	aaagctcaaa
LECV Plata	ttacaagaaa	atatcacagc	acacgaacaa	cagctcgtga	ctgctcggca	aaagcttaaa
LECV CO22-	ttacaagaaa	gtatcacagc	acacgaacaa	cagctcgtga	ctgctcggca	aaagcttaaa
LECV BA18-	ttacaagaaa	atatcacagc	acacgaacaa	cagctcgtga	ctgctcggca	aaagcttaaa
LECV BA18-	ttacaagaaa	atatcacagc	acacgaacaa	cagctcgtga	ctgctcggca	aaagcttaaa
LECV ER19-	ttacaagaaa	atatcacagc	acacgaacaa	cagctcgtga	ctgctcggca	aaagcttaaa
LECV 22819	ttacaagaaa	atatcacagc	acacgaacaa	cagctcgtga	ctgctcggca	aaagcttaaa
BAV BA10-A	ttacaagaaa	atatcacagc	acacgaacag	cagctcgtga	ctgctcggca	aaagcttaaa

BAV BA16-L	ttacaagaaa	atatcacagc	acacgaacaa	cagctcgtga	ctgctcggca	aaagcttaaa
BAV BA02-C	ttacaagaaa	atatcacagc	acacgaacaa	cagctcgtga	ctgctcggca	aaagcttaaa
BAV BA17-S	ttacaagaaa	atatcacagc	acacgaacaa	cagctcgtga	ctgctcggca	aaagctcaaa
BAV BA11-A	ttacaagaaa	atatcacagc	acacgaacaa	cagctcgtga	ctgctcggca	aaagctcaaa
BAV BA02-C	ttacaagaaa	atatcacagc	acacgaacaa	cagctcgtga	ctgctcggca	aaagcttaaa
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BAV BA02-C	ttacaagaaa	atatcacagc	acacgaacaa	cagctcgtga	ctgctcggca	aaagcttaaa
BAV Hu3969	ttacaagaaa	atatcacagc	acacgaacaa	cagctcgtga	ctgctcggca	aaagcttaaa
ANDV CHI-9	ttgcaggaaa	acatcacagc	acacgaacaa	cagctcgtga	ctgctcggca	aaagcttaag
ANDV AREB1	ttacaagaaa	acatcacagc	acacgaacaa	cagctcgtga	ctgctcggca	aaagcttaaa
ANDV Epuye	ctacaagaaa	acatcacagc	acacgaacaa	cagctcgtga	ctgctcggca	aaagcttaaa
ANDV Epili	ttacaagaaa	acatcacagc	acacgaacaa	cagctcgtga	ctgctcggca	aaagcttaaa
ANDV NRC-2	ttacaagaaa	acatcacagc	acacgaacaa	cagctcgtga	ctgctcggca	aaagcttaaa
ANDV NRC-4	ttacaagaaa	acatcacagc	acacgaacaa	cagctcgtga	ctgctcggca	aaagcttaaa
ANDV NRC-6	ttacaagaaa	acatcacagc	acacgaacaa	cagctcgtga	ctgctcggca	aaagcttaaa

.... ....	.... ....	.... ....	.... ....	.... ....	.... ....	.... ....
125	135	145	155	165	175	

SNV NM H10	gatgcagaaa	gagcgggtgga	attggacccc	gatgatgtta	acaaaagcac	attacagagc
RIOMV HTN-	gatgccgaga	aagcagttga	agtggaccca	gatgacgtta	acaagagcac	actacaaagc
LANV 510B	gatgccgaga	aagcagttga	agtggaccca	gatgacgtta	acaagagcac	actacaaagc
CHOV 588	gatgccgaga	gagcaattga	agtggacccg	gatgaagtta	acaaaagtac	actacagggg
JABV AKM96	gatgcagaaa	aggcgggtgga	tgcagaccca	gatgatgtca	ataaaaagtac	acttcaaagt
MAPV HV-97	gatgccgaga	aggcagttgga	ggtggaccca	gatgacgtta	ataagagcac	attacaaaac
JUQV oIn19	gatgccgaga	aagcagttgga	ggtggaccca	gatgacgtta	acaagagcac	attacaaagc
JUQV LH	gatgccgaga	aagcagttgga	ggtggaccca	gatgacgtta	acaagagcac	attacaaagc
PERV 14403	gatgccgaga	agaccgtgga	agtggaccca	gatgaagtca	acaagagcac	attacaaagt
MACV 13796	gatgcagaaa	aagccgtgga	cgtggaccca	gatgaggtta	acaagagtac	actacaaaggt
ORNV O1229	gatgccgaaa	agacggtgga	ggtggacccg	gatgaggtta	acaagagcac	attacaaagt
ORNV AND N	gatgccgaaa	agacggtgga	ggtggacccg	gatgaggtta	acaagagcac	attacaaagt
LECV BMJ-N	gatgccgaaa	agacggtgga	ggtggacccg	gatgaggtta	acaagagcac	actacaaagt
LECV BMJ-O	gatgccgaaa	agacggtgga	ggtggacccg	gatgaggtta	acaagagcac	actacaaagt
LECV Plata	gatgccgaga	agacggtgga	ggtggacccg	gatgaggtta	acaagagcac	actacaaagt
LECV CO22-	gatgccgaaa	agacggtgga	ggtggacccg	gatgaggtta	acaagagcac	actacaaagt
LECV BA18-	gatgccgaaa	agacggtgga	ggtggacccg	gatgaggtta	acaagagcac	actacaaagt
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LECV ER19-	gatgccgaaa	agacggtgga	ggtggacccg	gatgaggtta	acaagagcac	actacaaagt
LECV 22819	gatgccgaaa	agacggtgga	ggtggacccg	gatgaggtta	acaagagcac	actacaaagt
BAV BA10-A	gatgccgaaa	agacggtgga	ggtggacccg	gatgaggtta	acaagagcac	actacaaagt
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BAV BA02-C	gatgccgaaa	agacggtgga	ggtggacccg	gatgaggtta	acaagagcac	actacaaagt
BAV BA17-S	gatgccgaaa	agacggtgga	ggtggacccg	gatgaggtta	acaagagcac	actacaaagt
BAV BA11-A	gatgccgaaa	agacggtgga	ggtggacccg	gatgaggtta	acaagagcac	actacaaagt
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BAV Hu3969	gatgccgaaa	agacggtgga	ggtggacccg	gatgaggtta	acaagagcac	actacaaagt
ANDV CHI-9	gatgccgaga	aggcagttgga	ggtggacccg	gatgacgtta	acaagagcac	actacaaaat
ANDV AREB1	gatgccgaga	aggcgggtgga	ggtggacccg	gatgacgtta	acaagagcac	attacaaagt
ANDV Epuye	gatgccgaga	aggcgggtgga	ggtggacccg	gatgacgtta	acaagagcac	attacaaagt
ANDV Epili	gatgccgaga	aggcgggtgga	ggtggacccg	gatgacgtta	acaagagcac	actacaaagt
ANDV NRC-2	gatgccgaga	aggcgggtgga	ggtggacccg	gatgacgtta	acaagagcac	actacaaagt
ANDV NRC-4	gatgccgaga	aggcgggtgga	ggtggacccg	gatgacgtta	acaagagcac	actacaaagt
ANDV NRC-6	gatgccgaga	aggcgggtgga	ggtggacccg	gatgacgtta	acaagagcac	attacaaagt

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185	195	205	215	225	235	

SNV NM H10	agacgggcag	ctgtgtctgc	attggagacc	aaactcggag	aacttaagcg	ggaactggct
RIOMV HTN-	agacgggcag	ctgtgtctgc	attggagaat	aaactcgcag	aactcaagag	gcagttggca
LANV 510B	agacgggcag	ctgtgtctgc	attggagaat	aaactcgcag	aactcaagag	gcagttggca
CHOV 588	agaagggcag	ctgtgtctac	actggaaacc	aagctcggag	aactcaaaaag	gcagctggca
JABV AKM96	agaaagggcag	cagtttctgc	tcttgagaca	aaattagggg	agctgaaaag	acaactggct
MAPV HV-97	agacgggcag	ctgtgtctac	attggagagt	aaactcgggg	aactcaaaaag	gcaactggca
JUQV oIn19	agacgggcag	ctgtgtctac	attggagact	aaactcgggg	aactcaagcg	gcaactggca

JUQV LH	agacgggcag	ctgtgtctac	attggagact	aaactcgggg	aactcaagcg	acaactggca
PERV 14403	agacgggcgg	ctgtgtctac	attggagacc	aaacttggag	agctcaagag	gcagcttgca
MACV 13796	cgacgggcag	ctgtgtcaac	attggagacc	aaacttggag	agctcaagag	acagcttgct
ORNV 01229	agacgggcag	ctgtgtctac	attggagacc	aaactcggag	aacttaagag	gcagcttgcg
ORNV AND N	agacgggcag	ctgtgtctac	attggagacc	aaactcggag	aacttaagag	gcagcttgcg
LECV BMJ-N	agacgggcag	ctgtgtctac	attggagacc	aaactcgggg	aactcaagag	acaacttgca
LECV BMJ-O	agacgggcag	ctgtgtctac	attggagacc	aagctcgggg	aactcaagag	acaacttgca
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LECV ER19-	agacgggcag	ctgtgtctac	actggagacc	aaactcgggg	aactcaagag	acaacttgca
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ANDV NRC-4	agacgggcag	ctgtgtctac	actggagacc	aaactcgggg	aactcaagag	gcaacttgca
ANDV NRC-6	agacgggcag	ctgtgtctac	attggagacc	aaactcgggg	aactcaagag	gcaacttgcg

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	245	255	265	275	285	295
SNV NM H10	gatcttattg	cagctcagaa	attggcttca	aaacctggtg	atccaacagg	gattgaacct
RIOMV HTN-	gatttggttg	cagctcaaaa	attggctgca	aaaccagttg	atccaacagg	gcttgaacct
LANV 510B	gatttggttg	cagctcaaaa	attggctgca	aaaccagttg	atccaacagg	gcttgaacct
CHOV 588	gatttggtgg	cagctcaaaa	attggcttca	aaaccagttg	atccaacagg	gattgagcct
JABV AKM96	gatctggtag	catctcaaaa	attagcctcc	aaaccagttg	accccacagg	gttagaacct
MAPV HV-97	gatcttgtgg	cagctcagaa	actggcttca	aaaccagttg	atccaacagg	gcttgaacct
JUQV oln19	gatttggttg	cagctcagaa	actggctaca	aaaccagttg	atccaacagg	gcttgaacct
JUQV LH	gatctggttg	cagctcagaa	actggctaca	aaaccagttg	atccaacagg	gcttgaacct
PERV 14403	gatttggtgg	cagctcaaaa	gctggctgca	aagccagttg	atccaacagg	gcttgaacct
MACV 13796	gacttggtgg	cagctcaaaa	actggctaca	aaaccagttg	atccaacagg	gattgagcct
ORNV 01229	gatctggtgg	cagctcaaaa	actggctaca	aaaccagttg	atccaacagg	gcttgaacct
ORNV AND N	gatctggtgg	cagctcaaaa	actggctaca	aaaccagttg	atccaacagg	gcttgaacct
LECV BMJ-N	gatctggtgg	cagctcaaaa	actggctaca	agaccagttg	atccaacagg	gcttgaacct
LECV BMJ-O	gatttggtgg	cagctcaaaa	actggctaca	aaaccagttg	atccaacagg	gcttgaacct
LECV Plata	gatttggtgg	cagctcaaaa	actggctaca	aaaccagttg	atccaacagg	gcttgaacct
LECV CO22-	gatctggtgg	cagctcaaaa	actggctaca	aaaccagttg	atccaacagg	gcttgaacct
LECV BA18-	gatctggtgg	cagctcaaaa	actggctaca	aaaccagttg	atccaacagg	gcttgaacct
LECV BA18-	gatctggtgg	cagctcaaaa	actggctaca	aaaccagttg	atccaacagg	gcttgaacct
LECV ER19-	gatctggtgg	cagctcaaaa	actggctaca	aaaccagttg	atccaacagg	gcttgaacct
LECV 22819	gatctggtgg	cagctcaaaa	actggctaca	aaaccagttg	atccaacagg	gcttgaacct
BAV BA10-A	gatctggtgg	cagctcaaaa	actggctaca	aaaccagttg	atccaacagg	gcttgaacct
BAV BA16-L	gatttggtgg	cagctcaaaa	actggctaca	aaaccagttg	atccaacagg	gcttgaacct
BAV BA02-C	gatttggtgg	cagctcaaaa	actggctaca	aaaccagttg	atccaacagg	gcttgaacct
BAV BA17-S	gatttggtgg	cagctcaaaa	actggctaca	aaaccagttg	atccaacagg	gcttgaacct
BAV BA11-A	gatttggtgg	cagctcaaaa	actggctaca	aaaccagttg	atccaacagg	gcttgaacct
BAV BA02-C	gatttggtgg	cagctcaaaa	actggctaca	aaaccagttg	atccaacagg	gcttgaacct
BAV BA02-C	gatttggtgg	cagctcaaaa	actggctaca	aaaccagttg	atccaacagg	gcttgaacct
BAV BA02-C	gatttggtgg	cagctcaaaa	actggctaca	aaaccagttg	atccaacagg	gcttgaacct
BAV Hu3969	gatttggtgg	cagctcaaaa	actggctaca	aaaccagttg	atccaacagg	gcttgaacct
ANDV CHI-9	gatttggtgg	cagctcaaaa	attggctaca	aaaccagttg	atccaacagg	gcttgaacct
ANDV AREB1	gatctggtgg	cagctcaaaa	gttggctaca	aaaccagttg	atccaacagg	gcttgaacct
ANDV Epuye	gatctggtgg	cagctcaaaa	gttggctaca	aaaccagttg	atccaacagg	gcttgaacct

ANDV Epili	gatctggtgg	cagctcaaaa	gttggctaca	aaaccagttg	atccaacagg	gottgagcct
ANDV NRC-2	gatctggtgg	cagctcaaaa	attggctaca	aaaccagttg	atccaacagg	gottgagcct
ANDV NRC-4	gatctggtgg	cagctcaaaa	attggctaca	aaaccagttg	atccaacagg	gottgagcct
ANDV NRC-6	gatctggtgg	cagctcaaaa	gttggctaca	aaaccagttg	atccaacagg	gottgagcct

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305	315	325	335	345	355	

SNV NM H10	gatgaccatc	taaaggaaaa	gtcatcattg	agatatggaa	atgtccttga	tgtaaattcc
RIOMV HTN-	gatgaccatc	tgaaggaaaa	gtctgctctg	cgttatggaa	atgtccttga	tgtcaatgct
LANV 510B	gatgaccatc	tgaaggaaaa	gtctgctctg	cgttatggaa	atgtccttga	tgtcaatgct
CHOV 588	gatgaccatt	tgaaggaaaa	atctacactt	cgttatggca	atgtccttga	tgtgaactcc
JABV AKM96	gatgaccatc	tgaaggaaaa	atcaacactg	cgatatggaa	atgtcattga	tgtcaactcc
MAPV HV-97	gatgaccatt	tgaaggaaaa	atcatcactg	cgttatggaa	atgtccttga	tgtcaactcg
JUQV oln19	gatgaccatc	taaaggagaa	gtcttcatta	cggtatggca	atgtcatcga	tgtcaacca
JUQV LH	gatgaccatc	tgaaggagaa	gtcttcctta	cggtatggca	atgtcatcga	tgtcaacca
PERV 14403	gatgaccatc	tgaaggagaa	atcatctttg	aggtatggga	atgtccttga	tgtcaactcc
MACV 13796	gatgaccatc	tgaaggaaaa	atcatccttg	agatatggga	atgtccttga	tgtcaattct
ORNV O1229	gatgatcatc	tgaagaaaa	atcatctctc	cgttatggga	atgtccttga	tgtcaactcc
ORNV AND N	gatgatcatc	taaaagagaa	atcatctctc	cgttatggga	atgtccttga	tgtcaactcc
LECV BMJ-N	gatgatcatc	taaaggaaaa	gtcatcctta	aggtatggca	acgtccttga	tgtcaactcc
LECV BMJ-O	gatgatcatc	taaaggaaaa	gtcatcctta	aggtatggca	atgtccttga	tgtcaactcc
LECV Plata	gatgatcatc	taaaggaaaa	gtcatccttg	aggtatggca	atgttcttga	tgtcaactcc
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LECV BA18-	gatgaccatc	taaaggagaa	gtcatccttg	agatatggta	atgttcttga	tgtcaactct
LECV BA18-	gatgaccatc	taaaggaaaa	gtcatccttg	agatatggca	atgttcttga	tgtcaactct
LECV ER19-	gatgatcatc	taaaggaaaa	gtcatccttg	agatatggca	atgttcttga	tgtcaactct
LECV 22819	gatgatcatc	taaaggaaaa	gtcatccttg	agatatggta	atgttcttga	tgtcaactct
BAV BA10-A	gatgatcatt	tgaaggaaaa	gtcatcattg	cgttatggga	atgtgcttga	tgtcaactcc
BAV BA16-L	gatgatcatt	tgaaggaaaa	atcatcattg	cgttatggga	atgtacttga	tgtcaactcc
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ANDV AREB1	gatgaccatc	tgaagagaaa	atcatctctg	agatatggga	atgtccttga	tgttaactca
ANDV Epuye	gatgaccatc	tgaagagaaa	atcatctctg	agatatggga	atgtccttga	tgttaactca
ANDV Epili	gatgaccatc	tgaagaaaa	atcatctctg	agatatggga	atgtccttga	tgttaactca
ANDV NRC-2	gatgaccatc	tgaagagaaa	atcatcctt	agatatggga	atgtccttga	tgttaactca
ANDV NRC-4	gatgaccatc	tgaagagaaa	atcatctctg	agatatggga	atgtccttga	tgtgaattca
ANDV NRC-6	gatgaccatc	tgaagagaaa	atcatctcta	agatatggga	atgtccttga	tgttaactca

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365	375	385	395	405	415	

SNV NM H10	attgacttag	aagagccaag	tgggcaaaca	gctgattgga	aatccatcgg	actctacatt
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LANV 510B	attgaccttg	aagaaccgag	tggccaaact	gccgattgga	aggctatttg	agcctatatt
CHOV 588	attgatcttg	aagagcctag	tgggtcaaaca	gctgattgga	ggatcaattg	tgcttatatc
JABV AKM96	attgacttgg	aagaacctag	tggccagaca	gcagattgga	gggtcatttg	tgcctacatc
MAPV HV-97	attgatctgg	aagagccaag	tgggcaaaca	gcagattggt	tgtcaatttg	gatgtacatc
JUQV oln19	attgatctgg	aagagcccag	tggccaaact	gccgattgga	aagcaatttg	tgcctatata
JUQV LH	attgatctgg	aagaaccag	tggccagact	gcagactgga	aagcaatttg	tgcctatata
PERV 14403	attgaccttg	aagaaccgag	tgggtcaaaca	gctgattgga	aagcaatttg	ggcttatata
MACV 13796	attgacctgg	aagaaccaag	tggacaaacc	gctgactgga	aggctatttg	agcatacata
ORNV O1229	attgatcttg	aagagccaag	tgggtcaaact	gctgattgga	aagctatttg	ggcctacata
ORNV AND N	attgatcttg	aagagccaag	tgggtcaaact	gctgattgga	aagctatttg	ggcctacata
LECV BMJ-N	attgatctgg	aagaaccaag	tgggcagact	gccgactgga	ggctatttg	agcttatata
LECV BMJ-O	attgatctgg	aagaaccaag	tggacagact	gctgattgga	ggctatttg	ggcttatata
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LECV CO22-	attgatctag	aagaaccaag	tggacagact	gctgattgga	gatctatcgg	ggcttatata
LECV BA18-	atcgatctag	aagaaccaag	tggacagact	gctgattgga	gatctatcgg	ggcatatata
LECV BA18-	attgatctag	aagaaccaag	tggacagact	gctgattgga	gatctatcgg	ggcatatata

LECV ER19-	attgatctag	aagaaccaag	tggacagact	gctgattgga	gatctatcgg	ggcatatata
LECV 22819	attgatctag	aagaaccaag	tggacagact	gctgattgga	gatctattgg	ggcatatata
BAV BA10-A	attgatttgg	aagaaccaag	tgGCCAAact	gctgattgga	gggctattgg	agcttacata
BAV BA16-L	attgatctgg	aagaaccgag	tgGCCAAact	gctgattgga	gggctattgg	agcttacata
BAV BA02-C	attgatctgg	aagaaccgag	tgGCCAAact	gctgattgga	gggctattgg	agcttacata
BAV BA17-S	attgatctgg	aagaaccgag	tgGCCAAact	gctgattgga	gggctattgg	agcttacata
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ANDV AREB1	attgacttgg	aagaaccgag	tggacagact	gctgattgga	aggctatagg	agcataatc
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ANDV Epili	attgacttgg	aagaaccgag	tggacagact	gctgattgga	aggctatagg	agcataatc
ANDV NRC-2	atcgatttgg	aagaaccgag	tggacagact	gctgattgga	aggctatagg	agcataatc
ANDV NRC-4	attgatttgg	aagaaccaag	tggacagact	gctgattgga	aggctatagg	agcataatc
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425	435	445	455	465	475

SNV NM H10	ctaagtttgc	cattaccgat	tattcttaa	gccttgtaca	tggtatctac	taggggccgt
RIOMV HTN-	ctaggatttg	taataccaat	tatcctaaag	gcattatata	tgctttcaac	aagagggagg
LANV 510B	ctaggatttg	taataccaat	tatcctaaag	gcattatata	tgctttcaac	aagagggagg
CHOV 588	ctcggatttg	cactaccaat	catcttgaag	gccctctaca	tggtatccac	aagagggagg
JABV AKM96	ttgagctttg	caattccaat	catacttaa	gctctgtaca	tgctctccac	aagaggaagg
MAPV HV-97	ttgggctttg	ctatcccat	catattgaag	gcactttaca	tggtatccac	aagagggaga
JUQV oIn19	ttgggctttg	caataccgat	aatacttaa	gcattgtata	tgctttcaac	ccgagggaga
JUQV LH	ttaggctttg	caataccaat	aatacttaa	gcactgtaca	tgctttcaac	ccgagggaga
PERV 14403	ctgggatttg	caattccaat	catactgaa	gcactataca	tggtatccac	ccgtggaagg
MACV 13796	ctgggctttg	caattccgat	catcctaaag	gctttgtaca	tgctgtcaac	ccgtggaagg
ORNV O1229	ttaggatttg	ccataccaat	catcctgaa	gctctctaca	tgctttccac	ccgtgggaga
ORNV AND N	ttaggatttg	ccataccaat	catcctgaa	gctctctaca	tgctttccac	ccgtgggaga
LECV BMJ-N	ctaggctttg	caatcccaat	tatcctaaa	gccttatata	tgctttctac	cagagggcgg
LECV BMJ-O	ctaggctttg	caatcccaat	catcctaaag	gccttgtata	tgctttctac	ccgcgggctt
LECV Plata	ctagggtttg	caataccaat	tatcctaaag	gccttgtata	tgctctccac	ccgggggttg
LECV CO22-	cttggatttg	caataccgat	tatcctcaag	gccttgtata	tgctttctac	ccgggggctt
LECV BA18-	cttggatttg	caataccaat	tatcctcaag	gccctgtata	tgctttctac	ccgggggctt
LECV BA18-	cttgggtttg	caataccaat	tatcctcaag	gctttgtata	tgctttctac	ccgggggagg
LECV ER19-	cttgggtttg	caataccaat	tatccttaag	gccctgtata	tgctctctac	ccgggggctt
LECV 22819	cttgggtttg	caataccaat	tatcctcaag	gccctatata	tgctttctac	ccgggggctt
BAV BA10-A	cttggatttg	ctattcccat	catccttaa	gctctatata	tgctttccac	tcgtgggcga
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ANDV NRC-2	ttagggtttg	caattccgat	catactaaa	gccctatata	tgctgtcaac	ccgtggaaga
ANDV NRC-4	ttagggtttg	caattccgat	catactaaa	gccctatata	tgctatcaac	ccgtgggaga
ANDV NRC-6	ttagggtttg	caattccgat	catactaaa	gccctatata	tgctgtcaac	ccgcgggaga

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485	495	505	515	525	535

SNV NM H10	caaacaatca	aagaaaaca	gggaacaaga	attcgattca	aggatgattc	atccttatgaa
RIOMV HTN-	cagactgtta	aagagaaca	agggaccagg	attcgattca	aggatgattc	atcatttgaa
LANV 510B	cagactgtta	aagagaaca	agggaccagg	attcgattca	aggatgattc	atcatttgaa
CHOV 588	cagactgtga	aagaaaaca	aggcaccagg	atcagattta	aagatgattc	atccttcgaa

JABV AKM96	cagacagtta	aagagaataa	agggacaagg	atcaggttca	aggatgattc	ctcttatgaa
MAPV HV-97	cagacagtaa	aggaaaacaa	agggaccgg	atcaggttca	aggatgattc	ctcttttgaa
JUQV oln19	caaacagtga	aggacaacaa	atctactagg	attaggttca	aagatgattc	atcattcgag
JUQV LH	cagacagtaa	aggacaataa	agggactagg	atcaggttta	aagatgactc	atccttcgaa
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MACV 13796	cagacgggtca	aggacaacaa	ggggactaga	attagattca	aggatgattc	atcctttgaa
ORNV 01229	caaactgtca	aagacaacaa	ggggactaga	ataaggttca	aggatgactc	atcatttgaa
ORNV AND N	cagactgtca	aagacaacaa	ggggactaga	ataaggttca	aggatgactc	atcatttgaa
LECV BMJ-N	cagactgtca	aggacaacaa	agggaccagg	atacggttca	aggatgattc	atcctttgaa
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LECV Plata	cagactgtta	aggataacaa	agggacaagg	atacggttca	aggacgactc	atcatttgag
LECV CO22-	cagactgtca	aggacaacaa	agggacaaga	atacggttta	aagatgattc	atcatttgag
LECV BA18-	cagactgtca	aggacaacaa	agggacaaga	atccggttta	aagatgattc	atcctttgag
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LECV ER19-	cagactgtca	aggacaacaa	agggacaaga	atccggttta	aagatgattc	atcatttgag
LECV 22819	cagactgtca	aggacaacaa	agggacaaga	atccggttta	aagatgattc	ttcatttgag
BAV BA10-A	cagactgtca	aagacaacaa	aggaaaccaga	ataaggttca	aggatgattc	atcatttgag
BAV BA16-L	cagactgtca	aagacaacaa	aggaaaccagg	ataagattta	aggatgactc	atcatttgag
BAV BA02-C	cagactgtta	aagacaacaa	aggaaaccagg	ataagattta	aggatgactc	atcatttgag
BAV BA17-S	cagactgtta	aagacaacaa	aggaaaccagg	ataagattta	aggatgactc	atcatttgag
BAV BA11-A	cagactgtta	aagacaacaa	aggaaaccagg	ataagattta	aggatgactc	atcatttgag
BAV BA02-C	cagactgtca	aagacaacaa	aggaaaccaga	ataagattta	aggatgactc	atcatttgag
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ANDV CHI-9	caaactgtga	aagacaacaa	agggaccagg	ataaggttta	aggatgattc	ttcctttgaa
ANDV AREB1	caaactgtga	aagacaataa	aggaaaccagg	ataagattta	aggatgattc	ttcctttgaa
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ANDV NRC-4	cagactgtga	aagacaacaa	aggaaaccagg	ataaggttta	aggatgattc	ttcctttgaa
ANDV NRC-6	caaactgtga	aagacaataa	aggaaactagg	ataaggttta	aggatgattc	ttcctttgaa

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545	555	565	575	585	595

SNV NM H10	gaagtcaatg	ggatacgtaa	gccaaagacat	ctgtatgttt	ctatgccaac	tgcccagtct
RIOMV HTN-	gaagtcaatg	gcatccgaaa	acctaaacac	ttgtatgtgt	caatgcctac	tgcacaatct
LANV 510B	gaagtcaatg	gcatccgaaa	acctaaacac	ttgtatgtgt	caatgcctac	tgcacaatct
CHOV 588	gaggtaaatg	ggataagaaa	gcctaaacat	ctttatgtgt	cgatgccac	tgcacagtca
JABV AKM96	gaaatcaatg	ggataaggaa	accaaagcat	ctgtatgtat	ccatgccaac	tgcacaatca
MAPV HV-97	gaagttaatg	gcatcaggaa	accaaagcat	ctttatgtct	ctatgccaac	agcacagtca
JUQV oln19	gaagtcaatg	ggatccggaa	accaaagcat	ctttatgttt	caatgccaac	tgcacaatcg
JUQV LH	gagggtcaatg	gaatccggaa	accaaagcat	ctttatgttt	caatgccaac	tgcacaatca
PERV 14403	gagggtcaatg	ggatccggaa	gccgaaacat	ctttatgttt	caatgccaac	agcacagtcc
MACV 13796	gaagttaaatg	ggattaggaa	gccaaagcat	ctctacatct	ccatgccgac	tgctcagtcc
ORNV 01229	gagggtcaacg	gtatccggaa	accgaagcat	ctctatgtgt	caatgccaac	tgcacaatca
ORNV AND N	gagggtcaacg	gtatccggaa	accgaagcat	ctctatgtgt	caatgccaac	tgcacaatca
LECV BMJ-N	gagggtcaatg	gcatccgaaa	gcccaagcat	ttgtatgtat	ccatgccaac	agcacaatca
LECV BMJ-O	gagggtcaatg	gcatccgaaa	gcccaagcac	ttgtatgtgt	ccatgccaac	agcacagtca
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LECV ER19-	gagggtcaatg	gcatccgaaa	gcctaaacat	ttgtatgtat	ccatgcctac	agcacaatca
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BAV BA02-C	gagggttaacg	gcattaggaa	gcctaaacat	ttatatgtgt	caatgccaac	agcacaatca
BAV Hu3969	gagggtcaacg	gcattaggaa	gcccaagcat	ttatatgtgt	caatgccaac	agcacaatca

ANDV CHI-9	gaagtcaatg	ggatacgtaa	acccaaaacac	ctttacgtct	caatgccaac	tgcacagtcc
ANDV AREB1	gaagttaatg	ggatacgtaa	acccaaaacac	ctttatgtct	caatgccgac	tgcacagtct
ANDV Epuye	gaagtcaatg	ggatacgtaa	acccaaaacac	ctttatgtct	caatgccgac	tgcacagtct
ANDV Epili	gaagtcaatg	ggatacgtaa	acccaaaacac	ctttatgtct	caatgccgac	tgcacagtct
ANDV NRC-2	gaggtcaatg	ggatacgtaa	accgaaacat	ctttatgtct	caatgccaac	tgcacaatct
ANDV NRC-4	gaggtcaacg	ggatacgtaa	gccgaaacac	ctttatgtct	caatgccaac	tgcacaatct
ANDV NRC-6	gaagtcaatg	ggatacgtaa	acccaaaacac	ctttatgtct	caatgccgac	tgcacagtct

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605	615	625	635	645	655	

SNV NM H10	acaatgaaag	cagatgagat	tactcccggg	aggttccgta	caattgcttg	tggattattc
RIOMV HTN-	acaatgaagg	cagatgagat	aacaccgggg	aggtttagga	caattgcatg	tggcttattt
LANV 510B	acaatgaagg	cagatgagat	aacaccgggg	aggtttagga	caattgcatg	tggcttattt
CHOV 588	acaatgaagg	ctgatgaaat	aacacctgga	aggttccgga	caattgcatg	tggccttttc
JABV AKM96	actatgaagg	cagacgagat	aacaccaggg	aggttcagaa	caattgcttg	tggctctgtt
MAPV HV-97	actatgaagg	ctgatgagat	aacaccaggg	agatttcgga	cgattgcctg	tggctctttt
JUQV oln19	acaatgaagg	ctgaagagat	aacacctggg	cgctttcggg	cgattgcttg	cggactcttc
JUQV LH	acaatgaagg	ctgaagagat	aacacctggg	cggtttcgaa	caattgcttg	tggccttttc
PERV 14403	acaatgaaag	ctgaagaaat	aacaccaggc	aggtttagaa	ctattgcttg	tgggcttttc
MACV 13796	acaatgaaag	ctgaggagat	aacacctggg	aggtttagaa	cgattgtatg	tggattgttt
ORNV O1229	acaatgaagg	ctgaagagat	aacacctgga	cggttcagga	caattgcatg	tggactcttc
ORNV AND N	acaatgaagg	ctgaagagat	aacacctgga	cggttcagga	caattgcatg	tggactcttc
LECV BMJ-N	acaatgaagg	ctgaggagat	aacaccaggt	agacttagaa	caattgcatg	tggctctattc
LECV BMJ-O	acaatgaagg	ctgaggagat	aacaccaggg	aggttcagaa	caattgcatg	tggcctcttc
LECV Plata	acaatgaagg	ctgaagaaat	aacaccaggc	agattcagaa	cgattgcatg	tggctctcttc
LECV CO22-	acaatgaagg	ctgaagaaat	aacaccaggc	agattcagaa	caattgcatg	tggctctcttc
LECV BA18-	acaatgaagg	ctgaagagat	aacaccaggc	agattcagaa	caattgcatg	tggctctttt
LECV BA18-	acaatgaagg	ctgaagagat	aacaccaggc	agattcagaa	caattgcatg	tggctctttt
LECV ER19-	acaatgaagg	ctgaagagat	aacacctggc	agattcagaa	caattgcatg	tggctctttt
LECV 22819	acaatgaagg	ctgaagagat	aacaccaggc	agatttagaa	caattgcatg	tggctctttt
BAV BA10-A	acaatgaagg	cagaggaaat	aacaccaggt	aggttcagaa	caattgcatg	tggcctcttc
BAV BA16-L	acaatgaagg	cagaggaaat	aacaccaggt	aggttcagaa	caattgcatg	tggcctcttc
BAV BA02-C	acaatgaagg	cagaggaaat	aacaccaggt	aggttcagaa	cgattgcatg	tggcctcttc
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665	675	685	695	705	715	

SNV NM H10	ccagcccaag	tcaaagcaag	gaatattatc	agtcctgtca	tgggtgtgat	tggcttttagt
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LANV 510B	cctgctcaaa	tcaaagctcg	gaacattata	agtcacgtca	tgggtgtcat	tggcttttgg
CHOV 588	ccagctcaag	tcaaagccag	gaatataatt	agcccagtaa	tgggtgtcat	cggtttttgg
JABV AKM96	cctgcacagg	taaaggcaag	aatataata	agtcctgtca	tgggggtaat	cggattttgg
MAPV HV-97	cctgcacagg	tgaaggcaag	gaatataatc	agtcctgtga	tgggtgtcat	tgggttttag
JUQV oln19	ccagcccaag	tgaagcaag	gaatattata	agtcctgtca	tgggtgtcat	tggattcagc
JUQV LH	ccagcccaag	tgaaggcaag	gaatatcata	agtcctgtaa	tgggagtcac	tggattcagc
PERV 14403	cctgcacaag	ttaaggccag	gaatataatt	agtcacgtca	tgggggtaat	tggtttcagc
MACV 13796	cctgctcaag	tgaagcccag	gaatatcata	agcccagtga	tgggggtcat	tggtttttag
ORNV O1229	cctgcacaag	tgaaggccag	gaacatcatc	agtcacgtca	tgggagtaat	cgggttttag
ORNV AND N	cctgcacaag	tgaaggccag	gaacatcatc	agcccagtca	tgggagtaat	cgggttttag
LECV BMJ-N	cctgcacaag	tcaaagcaag	gagcattatc	agtcctgtca	tgggagtcac	cggatttttag
LECV BMJ-O	cctgcacaag	ttaaggcaag	aaacatcatt	agtcctgtca	tgggagttat	tggatttttag
LECV Plata	cctgcacaag	tgaaggcaag	gaacatcatt	agtcctgtca	tgggggtcat	tgggttcaag

LECV CO22-	cctgcacaag	tcaaagctag	gaacatcatt	agtctctgtca	tgggggtcat	tggattcagc
LECV BA18-	cctgcacaag	tcaaagctag	aaacatcatt	agtctctgtca	tgggggtcat	tggattcagc
LECV BA18-	cctgcacaag	tcaaagctag	aaacatcatt	agtctctgtca	tgggggtcat	tggattcagc
LECV ER19-	cctgcacaag	ttaaagctag	aaacatcatt	agtctctgtca	tgggggtcat	tggattcagc
LECV 22819	cctgcacaag	tcaaagctag	aaacatcatt	agtctctgtca	tgggggtcat	tggattcagc
BAV BA10-A	cctgcacaag	tgaaggctag	aaacatcatt	agccctgtga	tgggggtaat	tgggttcagc
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BAV Hu3969	cctgcacaag	tgaaagctag	gaacatcatt	agtctctgtga	tgggggtaat	tgggtttagc
ANDV CHI-9	ccagcacagg	tcaaagccc	aaatataata	agtctctgtaa	tgggagtaat	tggatttggc
ANDV AREB1	ccagcacagg	tcaaagctcg	aaacataata	agccctgtaa	tgggagtgat	tggatttggc
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ANDV NRC-2	ccagcacagg	ttaaagctcg	aaatataata	agtctctgtga	tgggagtaat	tggatttggc
ANDV NRC-4	ccagcacagg	tcaaagctcg	aaatataata	agtctctgtga	tgggagtaat	tggatttggc
ANDV NRC-6	ccagcacagg	tcaaagctcg	aaacataata	agccctgtaa	tgggagtgat	tggatttggc

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725	735	745	755	765	775

SNV NM H10	ttttttgtga	aagattggat	ggaaaggatt	gatgacttcc	tggctgcacg	ttgcccattt
RIOMV HTN-	cacttttgtga	aggactggat	ggaaaggatt	gacaactttc	taggagaaga	ttgcccattt
LANV 510B	cacttttgtga	aggactggat	ggaaaggatt	gacaactttc	taggagaaga	ttgcccattt
CHOV 588	ttttttgttaa	aggattggat	ggatcgtatt	gataattttc	tatctgctga	gtgtccattt
JABV AKM96	ttttttgtta	aggattggat	ggatcggata	gaagactttt	tggctgcaga	gtgcccattt
MAPV HV-97	ttcttttgtga	aggactggat	ggataggatt	gaagaattcc	ttggtgcaga	atgtccattc
JUQV oIn19	ttttttgtca	aagattggat	ggaaaggatt	gaaaattttc	tagctgctga	atgcccattt
JUQV LH	ttcttttgtaa	aggactggat	ggaaagaatt	gaaaacttcc	tggctgctga	atgcccgttt
PERV 14403	ttcttctgtca	aggactggat	ggaaagaatt	gaagattttc	tagctgcaga	gtgtccgttt
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ORNV AND N	ttcttttgtga	aggattggat	ggaaaggatt	gaggattttc	tggcagctga	atgcccattc
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LECV BMJ-O	ttcttttgtaa	aagattggat	ggaaaggata	gaagactttt	tggcagctga	atgtcctttc
LECV Plata	ttcttttgtga	aggactggat	ggaaaggata	gaagattttc	tggcagctga	atgtcctttc
LECV CO22-	ttcttttgtga	aggattggat	ggaaaggata	gaagattttc	tggcagctga	atgtcctttc
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LECV ER19-	ttcttttgtga	aagattggat	ggaaaggata	gaagattttc	tggcagctga	atgtcctttc
LECV 22819	ttcttttgtga	aggattggat	ggaaaggata	gaagattttc	tggcagctga	atgtcctttc
BAV BA10-A	ttcttttgtta	aagactggat	ggaaaggata	gaagattttc	tggcagcgga	atgcccattt
BAV BA16-L	ttcttttgtta	aagactggat	ggaaaggata	gaagattttc	tggcagctga	atgcccattt
BAV BA02-C	ttcttttgtta	aagactggat	ggaaaggata	gaagattttc	tggcggctga	atgcccattt
BAV BA17-S	ttcttttgtta	aagactggat	ggaaaggata	gaagattttc	tggcagctga	atgcccattt
BAV BA11-A	ttcttttgtta	aagactggat	ggaaaggata	gaagattttc	tggcagctga	atgcccattt
BAV BA02-C	ttcttttgtta	aggactggat	ggaaaggata	gaagattttc	tggcagctga	atgcccattt
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BAV Hu3969	ttcttttgtta	aagactggat	ggaaaggatt	gaagattttc	tggcagctga	atgcccattt
ANDV CHI-9	ttcttttgtaa	aggattggat	ggatcggata	gaagagtttc	tggctgcaga	gtgtccattc
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ANDV NRC-4	ttcttttgtaa	aggactggat	ggatcggata	gaggaattcc	tggctgcaga	gtgtccattc
ANDV NRC-6	ttcttttgtga	aggactggat	ggatcggata	gaggaattcc	tggctgcaga	gtgtccattc

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785	795	805	815	825	835

SNV NM H10	ctgcctgagc	agaagaccc	tagagatgct	gcattggcaa	ctaataagagc	ctattttata
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RIOMV HTN-	cttccaaagg	ctagggttca	atcagaggca	ttcatgtcaa	cgaatagggc	atattttcta
LANV 510B	cttccaaagg	ctagggttca	atcagaggca	ttcatgtcaa	cgaatagggc	atattttcta
CHOV 588	ttgcagaagc	caaaagttcc	atctgaggca	tttacaacca	caaatcgggc	atattttctg
JABV AKM96	ctgccaaaac	caaagaatca	ggcagatgca	ttcatgggga	caaacagagc	ttattttatt
MAPV HV-97	ctccccaaac	caaaatccca	gtcagagaat	ttcatgtcaa	caaatagggc	ttatctaatt
JUQV oln19	cttccaaaac	caaaggtcgc	atctgaggca	ttcatggcta	caaacaaggc	atactttcta
JUQV LH	cttccaaaac	cgaaggttgc	atctgaggca	ttcatggcaa	caaataaggc	atacttttta
PERV 14403	ctacctaagc	ctaaaaccac	ctctgaggca	ttcatgtcaa	ctaataaggc	ttattttcta
MACV 13796	ttacctaagc	ccaaaacagc	tgctgagaca	ttcatggcca	ccaataaggc	atactttttt
ORNV 01229	ttacctaaac	ccaaggcatt	gtctgaagca	ttcatggcta	ctaataaagc	ttattttctg
ORNV AND N	ttacctaaac	ccaaggcatt	gtctgaagca	ttcatggcta	ctaataaagc	ttattttctg
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LECV ER19-	ttacccaaac	caaaggcacc	atctgaagca	ttcatggcca	ccaataaagc	ctactttctg
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BAV BA10-A	ttgcccaagc	ctaaagctcc	atctgaggca	tttatggcta	ccaacaaagc	atattttctg
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ANDV CHI-9	ttacctaagc	caaaggtcgc	ctcagaagcc	ttcatgtcta	ccaataagat	gtattttctg
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ANDV NRC-4	ctgcctaagc	caaaggttgc	ctcagaagcc	ttcatgtcta	ccaacaagat	gtattttctg
ANDV NRC-6	ttgcctaagc	caaaggttgc	ctcagaagcc	ttcatgtcta	ccaacaagat	gtattttctg

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845	855	865	875	885	895

SNV NM H10	acacgtcaat	tacaggttga	tgagtcaaa	gtagtgata	ttgaggacct	gattgctgat
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LANV 510B	aacaggcaga	ggcaagtgga	tgagtcgaga	atacaggaca	ttgtggattt	aatacaagca
CHOV 588	gcaaggcaaa	gtcaggtgag	agagtctatt	cttcttgaca	ttgaagacct	aattgatata
JABV AKM96	aacaggcaaa	accaagttga	ggagtcgaag	atccctgaca	ttgttgacct	aatcgatgag
MAPV HV-97	aacagacaac	agcaagttcg	ggaatcccag	gtggctgaaa	ttgtggacct	catccagaca
JUQV oln19	aataggcgagc	gtcaagttaa	tgattcaaa	gtccaagaca	tcgtagacct	tatcgagcat
JUQV LH	aaccggcgagc	gccaagtcaa	tgactcaaa	gtccaggaca	ttgtggacct	tattgaccat
PERV 14403	aacaggcaga	gacaggttga	tgaaatctca	gtcccagaca	tagcagaact	gatagaacag
MACV 13796	aacaggcaac	gccaggttga	tgagtctcaa	gtcccagata	ttgttgaact	tattgaccag
ORNV 01229	aataggcaac	ggcaggtgaa	tgattcaaaa	gtccaagata	tagttgacct	cattgaccat
ORNV AND N	aataggcaac	ggcaggtgaa	tgattcaaaa	gtccaagata	tagttgacct	cattgaccat
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LECV ER19-	aacagacaac	gacaggttaa	tgagtcaaaa	gttcaggaca	tagttgacct	cattgatcac
LECV 22819	aacagacaac	gacaggttaa	tgagtcaaaa	gttcaggaaa	tagttgacct	cattgatcac
BAV BA10-A	aacaggcaga	ggcaagtcaa	cgaatctaag	gtccaagata	ttgtggacct	aattgatcat
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BAV BA02-C	aacaggcaga	ggcaagtcaa	cgaatctaag	gtccaagata	ttgtggacct	aattgatcat
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BAV BA11-A	aacaggcaga	ggcaagtcaa	cgaatctaag	gtccaagata	ttgtggacct	aattgatcat
BAV BA02-C	aacaggcaga	ggcaagtcaa	cgaatctaag	gtccaagata	tcgtggacct	aattgatcat

BAV BA02-C	aacagggcaga	ggcaagtcaa	ogaatctaag	gtccaagata	tcgtggactt	aattgatcat
BAV BA02-C	aacagggcaga	ggcaagtcaa	ogaatctaag	gtccaagata	tcgtggactt	aattgatcat
BAV Hu3969	aacagggcaga	ggcaagtcaa	ogaatctaaa	gtccaagata	ttgtagactt	aatcgatcat
ANDV CHI-9	aacagacaga	gacaagtcaa	tgaatctaag	gttcaagata	ttatcgattt	gatagacat
ANDV AREB1	aacagacaga	gacaagtcaa	tgaatctaag	gttcaagaca	ttattgattt	gatagatcat
ANDV Epuye	aacagacaga	gacaagtcaa	tgaatctaag	gttcaagaca	ttattgattt	gatagatcat
ANDV Epili	aacagacaga	gacaagtcaa	tgaatctaag	gttcaagaca	ttattgattt	gatagatcat
ANDV NRC-2	aacagacaaa	gacaggtcaa	tgaatctaag	gttcaagaca	ttattgattt	aatagatcat
ANDV NRC-4	aacagacaaa	gacaagtcaa	tgaatctaag	gttcaagaca	tcattgattt	aatagatcat
ANDV NRC-6	aacagggcaga	gacaagtcaa	tgaatctaag	gttcaagaca	ttattgattt	gatagatcat

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905	915	925	935	945	955	

SNV NM H10	gcaagggctg	agtctgccac	tatattcgca	gatattgcta	ctcctcattc	agtttggggtc
RIOMV HTN-	gcagaggcaa	gttcagctac	actattcaat	gacattgcaa	caccacattc	tgcattggggtt
LANV 510B	gcagaggcaa	gttcagctac	actattcaat	gacattgcaa	caccacattc	tgcattggggtt
CHOV 588	gctgagtctg	aaggtgccac	cctattttaa	gacattgctg	tcctcactc	tgtgtggggtt
JABV AKM96	gcagaagcag	agggggcaac	attgtctcga	gacatagcag	taccacattc	tgcattggatt
MAPV HV-97	gctgaggcag	aatctgccac	attattccat	gatattgcca	gccccattc	tgtctggggtt
JUQV oln19	gcagagatcg	agtctgcaac	attgtttact	gacattgcaa	caccacattc	tgtttggggtg
JUQV LH	gcagaaattg	aatctgcaac	attgtttact	gacattgcaa	caccacattc	tgtatgggta
PERV 14403	gcggaatctg	agtctgcaac	tttattcaca	gaaattgcaa	gcctcattc	agtatgggta
MACV 13796	gctgagtctg	agtctgccac	cctgtttaca	gaaatagcta	gccccattc	agtgtggggtg
ORNV O1229	gcagagattg	aatcagcaac	acttttcaca	gacattgcaa	ctccccattc	agtttgggta
ORNV AND N	gcagagattg	aatcagcaac	acttttcaca	gacattgcaa	ctcctcattc	agtttgggta
LECV BMJ-N	gcagagaccg	agtcagcaac	actgttcaca	gatattgcta	ctccacactc	agtgtgggta
LECV BMJ-O	gcgagagactg	agtcagcaac	attgtttacg	gatattgcta	ctccacactc	agtgtggggtg
LECV Plata	gcagagactg	agtcagcaac	attgttcaca	gatattgcta	ctccacactc	agtgtggggtg
LECV CO22-	gcagagaccg	agtcagcaac	actgtttaca	gatattgcaa	ctccacactc	agtgtggggtg
LECV BA18-	gcagagactg	agtcagcaac	actgtttaca	gatattgcaa	ctccacactc	agtgtggggtg
LECV BA18-	gcagagactg	agtcagcaac	actgtttaca	gatattgcaa	ctccacactc	agtgtgggta
LECV ER19-	gcagagactg	agtcagcaac	actgtttaca	gatattgcaa	ccccacactc	agtgtggggtg
LECV 22819	gcagagactg	agtcagcaac	attgtttaca	gatattgcaa	ctccacactc	agtatggggtg
BAV BA10-A	gcagagactg	aatcggcaac	actgtttaca	gatattgcca	ccccacactc	agtgtgggta
BAV BA16-L	gcagagactg	aatcggcaac	actgtttaca	gatattgcca	ccccacactc	agtgtgggta
BAV BA02-C	gcagagactg	aatcggcaac	cctgtttaca	gatattgcca	ccccacactc	agtgtgggta
BAV BA17-S	gcagagactg	aatcggcaac	actgtttaca	gatattgcca	ccccacactc	agtgtgggta
BAV BA11-A	gcagagactg	aatcggcaac	actatttaca	gatattgcca	ccccacactc	agtgtgggta
BAV BA02-C	gcagagactg	aatcggcaac	actgtttaca	gatattgcca	ccccacactc	agtgtgggta
BAV BA02-C	gcagagactg	aatcggcaac	actgtttaca	gatattgcca	ccccacactc	agtgtgggta
BAV BA02-C	gcagagactg	aatcggcaac	actgtttaca	gatattgcca	ccccacactc	agtgtgggta
BAV Hu3969	gcagagactg	aatcggcaac	actgtttaca	gatattgcca	ccccacactc	agtgtgggta
ANDV CHI-9	gctgagaccg	agtctgctac	cttgtttaca	gagattgcaa	cacccattc	agtctggggtg
ANDV AREB1	gctgaaactg	aatctgccac	cttgtttacg	gaaattgcaa	cacccattc	agtctggggtg
ANDV Epuye	gctgaaactg	agtctgctac	cttgtttacg	gaaattgcaa	cacccattc	agtctggggtg
ANDV Epili	gctgaaactg	agtctgctac	cttgtttacg	gaaattgcaa	cacccattc	agtctggggtg
ANDV NRC-2	gctgaaactg	agtctgctac	cttgtttaca	gaaattgcaa	cacccattc	agtctggggtg
ANDV NRC-4	gctgaaactg	agtctgctac	cttgtttaca	gaaattgcaa	cacccattc	agtctggggtg
ANDV NRC-6	gctgaaactg	agtctgctac	cttgtttacg	gaaattgcaa	cacccattc	agtctggggtg

.... ....	.... ....	.... ....	.... ....	.... ....	.... ....	.... ....
965	975	985	995	1005	1015	

SNV NM H10	tttgcattgtg	ctccagatcg	ttgtccacct	acagcattat	atgtggccgg	gatgccggaa
RIOMV HTN-	tttgcattgtg	ccccagatag	gtgtcctcca	actgcattat	atgttgccagg	tgtcccagaa
LANV 510B	tttgcattgtg	ccccagatag	gtgtcctcca	actgcattat	atgttgccagg	tgtcccagaa
CHOV 588	tttgcctgtg	caccagaccg	gtgtccacca	acagcactat	atattgctgg	gatgcctgag
JABV AKM96	tttgcattgcg	caccagatag	gtgtccacca	actgcattat	atgttgccagg	aatcccagaa
MAPV HV-97	tttgcattgtg	cacctgatcg	atgtccctcca	actgctttat	atgttgccagg	cgttccctgag
JUQV oln19	tttgcattgtg	cacctgatag	atgtccacca	acggcattgt	atgttagcagg	agtcccata
JUQV LH	tttgcattgtg	cacctgatag	atgtccaccg	acagcattgt	atgttagcagg	agtcccagag
PERV 14403	tttgcattgtg	caccagatag	atgtcccgct	acagccctgt	atgttgccagg	agtaccagaa
MACV 13796	tttgcattgtg	cacctgatag	gtgtccaccg	acagcattat	atgttgccagg	agtgccagag
ORNV O1229	ttcgcattgtg	caccagatcg	ctgtccaccg	acagccttat	atgttgccagg	ggttccctgag
ORNV AND N	ttcgcattgtg	caccagatcg	ctgtccaccg	acagccttat	atgttgccagg	ggttccctgag

LECV BMJ-N	tttgc	atgtg	ctgtc	acagc	atgtt	tgttc
LECV BMJ-O	tttgc	atgtg	ttgtc	acagc	atgtc	tgttc
LECV Plata	tttgc	atgtg	ttgcc	acagc	atgtt	tgttc
LECV CO22-	tttgc	atgtg	ttgtc	acagc	atgtt	tgttc
LECV BA18-	tttgc	atgtg	ttgtc	acagc	atgtt	tgttc
LECV BA18-	tttgc	atgtg	ttgtc	acagc	atgtt	tgttc
LECV ER19-	tttgc	atgtg	ttgtc	acagc	atgtt	tgttc
LECV 22819	tttgc	atgtg	ttgcc	acagc	atgtt	tgttc
BAV BA10-A	tttgc	atgtg	ttgcc	acagc	atgtt	ggtc
BAV BA16-L	tttgc	atgtg	ttgcc	acaac	atgtt	ggtc
BAV BA02-C	tttgc	atgtg	ttgcc	acagc	atgtt	ggtc
BAV BA17-S	tttgc	atgtg	ttgcc	acagc	atgtt	ggtc
BAV BA11-A	tttgc	atgtg	ttgcc	acagc	atgtt	ggtc
BAV BA02-C	tttgc	atgtg	ttgcc	acagc	atgtt	ggtc
BAV BA02-C	tttgc	atgtg	ttgcc	acagc	atgtt	ggtc
BAV BA02-C	tttgc	atgtg	ttgcc	acagc	atgtt	ggtc
BAV Hu3969	tttgc	atgtg	ttgcc	acagc	atgtt	ggtc
ANDV CHI-9	tttgc	atgtg	gtgcc	actgc	atgtt	ggta
ANDV AREB1	tttgc	atgtg	gtgcc	actgc	atgtt	ggta
ANDV Epuye	tttgc	atgtg	gtgcc	actgc	atgtc	ggta
ANDV Epili	tttgc	atgtg	gtgcc	actgc	atgtt	ggta
ANDV NRC-2	tttgc	atgtg	gtgcc	actgc	atgtt	ggta
ANDV NRC-4	tttgc	atgtg	gtgcc	actgc	atgtt	ggta
ANDV NRC-6	tttgc	atgtg	gtgcc	actgc	atgtt	ggta

	.... ....	.... ....	.... ....	.... ....	.... ....	.... ....
	1025	1035	1045	1055	1065	1075
SNV NM H10	ctgggtg	tttttg	tctccag	atgagga	ccataat	atccaaat
RIOMV HTN-	ctcgggg	tctttgc	actccag	atgagaa	caatcat	atctaaat
LANV 510B	ctcgggg	tctttgc	actccag	atgagaa	caatcat	atctaaat
CHOV 588	cttggag	tcttcg	acttca	atgagaa	ccatcat	atcaaaat
JABV AKM96	ttgggtg	tcttct	ccttca	atgagaa	ccattat	atcaaaat
MAPV HV-97	cttgggg	tcttct	cctacag	atgagaa	ccatcat	ctcaaa
JUQV oIn19	ttgggag	tctttgc	actccag	atgcg	ccatcat	ttcaaa
JUQV LH	ctaggtg	tttttg	acttcag	atgcg	ccatcat	ttcaaa
PERV 14403	cttgggg	tttttg	actaca	atgagga	caataat	atcaaa
MACV 13796	ctaggtg	tttttg	actaca	atgagaa	ccattat	atcaaa
ORNV O1229	ctagggg	tctttgc	ccttcag	atgcg	caatcat	atcaaa
ORNV AND N	ctagggg	tctttgc	ccttcag	atgcg	caatcat	atcaaa
LECV BMJ-N	ttgggtg	tttttg	cctacag	atgcg	caatcat	ctcaaa
LECV BMJ-O	ttgggtg	tctttgc	tttgca	atgcg	caattat	ttcaaa
LECV Plata	ttgggtg	tctttgc	cctacag	atgcg	caatcat	ttcaaa
LECV CO22-	ctgggtg	tctttg	cctacag	atgagaa	cgatcat	atcaaa
LECV BA18-	ctgggtg	tttttg	tctacag	atgcg	cgatcat	atcaaa
LECV BA18-	ctgggtg	tttttg	tctacag	atgcg	cgatcat	atcaaa
LECV ER19-	ctgggtg	tttttg	tctacag	atgcg	caatcat	atcaaa
LECV 22819	ctgggtg	tttttg	tctacag	atgcg	caatcat	atcaaa
BAV BA10-A	ctaggtg	tctttg	tttgca	atgcg	caatcat	atcaaa
BAV BA16-L	ctaggtg	tttttg	tttgca	atgcg	caatcat	atcaaa
BAV BA02-C	ctaggtg	tttttg	tttgca	atgcg	caatcat	atcaaa
BAV BA17-S	ctaggtg	tttttg	tttgca	atgcg	caatcat	atcaaa
BAV BA11-A	ctaggtg	tttttg	tttgca	atgcg	caatcat	atcaaa
BAV BA02-C	ctaggtg	tttttg	tttgca	atgcg	caatcat	atcaaa
BAV BA02-C	ctaggtg	tttttg	tttgca	atgcg	caatcat	atcaaa
BAV BA02-C	ctaggtg	tttttg	tttgca	atgcg	caatcat	atcaaa
BAV Hu3969	ctaggtg	tctttg	tttgca	atgcg	caatcat	atcaaa
ANDV CHI-9	cttgggt	tttttt	ccttcag	atg	ccatcat	atctaa
ANDV AREB1	cttgggt	tcttttc	tcttcag	atg	ccatcat	atctaa
ANDV Epuye	cttgggt	tcttttc	tcttcag	atg	ccatcat	atctaa
ANDV Epili	cttgggt	tcttttc	tcttcag	atg	ccattat	atctaa
ANDV NRC-2	cttgggt	tttttt	ccttcag	atg	ccatcat	atccaa
ANDV NRC-4	cttgggt	tcttttc	tcttcag	atg	ccatcat	atccaa
ANDV NRC-6	cttgggt	tcttttc	tcttcag	atg	ccatcat	atctaa

	.... ....  1085	.... ....  1095	.... ....  1105	.... ....  1115	.... ....  1125	.... ....  1135
SNV NM H10	gtggggacat	ctgaagagaa	attgaagaag	aaatcagcat	tctaccagtc	atacttaaga
RIOMV HTN-	gttggaacag	cagaagaaaa	gttgaagaag	aaatctgcct	tctaccagtc	atatttacgg
LANV 510B	gttggaacag	cagaagaaaa	gttgaagaag	aaatctgcct	tctaccagtc	atatttacgg
CHOV 588	gtgggaactg	ctgaggaaaa	actgaagaag	aaatctgcat	tctatcagtc	atatcttcga
JABV AKM96	gtcgggacag	ctgaagaaaa	acttaagaaa	aaatctgcat	tctaccagtc	ttatttaagg
MAPV HV-97	gtaggcactt	ctgaagagaa	actgaagaaa	aaatcagcct	ttaccaatc	atatctccgc
JUQV oln19	gttggcactg	ctgaagaaaa	gctgaagaag	aagtctgcat	tctaccaatc	ttatctaaga
JUQV LH	gtcggcactg	ctgaggagaa	actcaagaaa	aagtctgcat	tctatcaatc	ttacttgaga
PERV 14403	gtcgggactg	cagaagagaa	gctcaagaag	aagtctgctt	tctaccagtc	atacttgagg
MACV 13796	gtgggaacag	ctgaggagaa	gttaaagaag	aaatcagcat	tctatcaatc	ttatttgaga
ORNV O1229	gtaggaacag	ctgaagaaaa	actcaagaag	aagtctgcat	tctaccagtc	atacctaagg
ORNV AND N	gtaggaacag	ctgaagaaaa	actcaagaag	aagtctgcat	tctaccagtc	atacctaagg
LECV BMJ-N	gtagggacag	ctgaagaaaa	gctcaagaag	aagtctgctt	tctaccagtc	atacttaaga
LECV BMJ-O	gttgggacag	ctgaagaaaa	actcaagaaa	aaatctgcct	tctaccagtc	atacttgaga
LECV Plata	gtaggaacag	ctgaagaaaa	attgaaaaag	aaatctgctt	tctaccagtc	atacttaaga
LECV CO22-	gtaggaacag	ctgaagagaa	gctgaagaaa	aaatctgcct	tctaccagtc	atacttgaga
LECV BA18-	gtaggaacag	ctgaagagaa	gctgaagaaa	aaatctgcct	tctaccagtc	atacttgagg
LECV BA18-	gtaggaacag	ctgaagagaa	gctgaagaaa	aaatctgcct	tctaccagtc	atacttgagg
LECV ER19-	gtaggaacag	ctgaagagaa	gctgaagaaa	aaatctgcct	tctaccagtc	atacttaagg
LECV 22819	gtaggaacag	ctgaagagaa	gctgaagaaa	aaatctgcct	tctaccagtc	atacttgagg
BAV BA10-A	gtgggaacag	ctgaagaaaa	gcttaagaag	aaatctgcct	tctaccagtc	ttacctcagg
BAV BA16-L	gtgggaacag	ctgaagaaaa	gcttaagaag	aaatctgcct	tctaccagtc	ttacctcagg
BAV BA02-C	gtgggaacag	ctgaagaaaa	gcttaagaag	aaatctgcct	tctaccagtc	ttacctcagg
BAV BA17-S	gtgggaacag	ccgaagaaaa	gcttaagaag	aaatctgcct	tctaccagtc	ttacctcagg
BAV BA11-A	gtgggaacag	ccgaggaaaa	gcttaagaag	aaatctgcct	tctaccagtc	ttacctcagg
BAV BA02-C	gtgggaacag	ccgaagaaaa	gcttaagaag	aaatctgcct	tctaccagtc	ttacctcagg
BAV BA02-C	gtgggaacag	ccgaagaaaa	gcttaagaag	aaatctgcct	tctaccagtc	ttacctcagg
BAV BA02-C	gtgggaacag	ccgaagaaaa	gcttaagaag	aaatctgcct	tctaccagtc	ttacctcagg
BAV Hu3969	gtgggaacag	ctgaagaaaa	gcttaagaag	aaatctgcct	tctaccagtc	ttacctcagg
ANDV CHI-9	gtagggactg	cagaagagaa	gctaaagaaa	aaatctgcct	tctaccaatc	atacctaaga
ANDV AREB1	gtagggactg	cagaagagaa	gctaaagaag	aaatctgcct	tctatcaatc	ttacctgaga
ANDV Epuye	gtagggactg	cagaagagaa	gctaaagaag	aaatctgcct	tctatcaatc	ttacctgaga
ANDV Epili	gtagggactg	cagaagagaa	gctaaagaag	aaatctgcct	tctatcaatc	ttacctgaga
ANDV NRC-2	gtggggactg	cagaagagaa	gctgaagaag	aaatctgcct	tctatcaatc	ttaccttaaga
ANDV NRC-4	gtggggactg	cagaagagaa	gctgaagaag	aaatcgcctt	tctatcaatc	ttaccttaaga
ANDV NRC-6	gtagggactg	cagaagagaa	gctaaagaag	aaatctgcct	tctatcaatc	ttacctgaga

	.... ....  1145	.... ....  1155	.... ....  1165	.... ....  1175	.... ....  1185	.... ....  1195
SNV NM H10	cgtactcagt	caatgggaat	tcaactggac	cagaagataa	tcactttata	catgagccat
RIOMV HTN-	agaactcaat	caatggggat	acagttagac	caaaaaatca	tcatacttta	catgttgtct
LANV 510B	agaactcaat	caatggggat	acagttagac	caaaaaatca	tcatacttta	catgttgtct
CHOV 588	aggacacagt	ctatggggat	tcaacttagac	caaaggataa	tcactctcta	catgctccat
JABV AKM96	cgaacacagt	caatgggaat	acaactggat	caaaagataa	ttataatgta	tatgcttcat
MAPV HV-97	agaacacaat	caatgggaat	ccagctcgac	cagaagatca	tcactcatgta	catgctgcac
JUQV oln19	agaactcaat	ctatggggat	acaactggat	caaaaaatta	taattatgta	catgctattc
JUQV LH	agaactcaat	ctatggggat	acaactggat	cagaagatta	taattatgta	tatgttattc
PERV 14403	agaaccagt	caatggggat	tcagttggat	cagaagatta	taatcctcta	tatgttgtca
MACV 13796	cgaacacagt	caatggggat	tcaactggac	cagaagatca	tcactctgta	tatgttgtct
ORNV O1229	cggacacaat	ctatgggaat	ccaactggac	caaaagatca	taatccttta	catgctatcc
ORNV AND N	cggacacaat	ctatgggaat	ccaactggac	caaaagatca	taatccttta	catgctatcc
LECV BMJ-N	aggacacagt	ccatggggat	tcaactggac	caaaagatca	tcactctcta	catgttgtct
LECV BMJ-O	aggacacaat	ctatggggat	tcaactggac	cagaagatca	taattctcta	catgctatca
LECV Plata	aggacgcaat	ctatggggat	tcaactggac	caaaaaatca	taatccttta	catgctatca
LECV CO22-	aggacacaat	ctatgggaat	tcaactggat	caaaagatca	tcactctcta	tatgctatca
LECV BA18-	aggacacaat	ctatgggaat	tcaactggat	caaaagatca	taatcctcta	tatgctatca
LECV BA18-	aggacacaat	ctatgggaat	tcaactggat	caaaagatca	taatcctcta	tatgctatca
LECV ER19-	aggacacaat	ctatgggaat	tcaactggat	caaaagatca	taatcctcta	tatgctatca
LECV 22819	aggacacaat	ctatgggaat	tcagctggat	caaaagatca	taatcctcta	tatgctatca
BAV BA10-A	agaacgcaat	caatgggaat	tcaactggat	cagaagatca	taatcctcta	catgctotca
BAV BA16-L	agaacgcaat	caatgggaat	ccaactggat	cagaagatca	taactctcta	catgctotca
BAV BA02-C	agaacgcaat	caatgggaat	ccaactggat	cagaagatca	taatcctcta	catgctotca

BAV BA17-S	agaacgcaat	caatgggaat	ccaactggat	cagaagatca	taatcctcta	catgctctca
BAV BA11-A	agaacgcaat	caatgggaat	ccaactggat	cagaagatca	taatcctcta	catgctctca
BAV BA02-C	agaacgcaat	caatgggaat	ccaattggat	cagaaaatca	taatcctcta	catgctctca
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BAV BA02-C	agaacgcaat	caatgggaat	ccaactggat	cagaagatca	taatcctcta	catgctctca
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ANDV CHI-9	aggacacaa	ctatgggaat	ccaactggac	cagaagatca	taatccttta	catgctatca
ANDV AREB1	aggacacaa	ctatggggat	tcaactggac	caaagatca	taatcctcta	catgctctca
ANDV Epuye	agaacacaa	ctatggggat	tcaactggac	caaagatca	taatcctcta	catgctttca
ANDV Epili	aggacacaa	ctatggggat	tcaactggac	caaagatca	taatcctcta	catgctctca
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ANDV NRC-4	aggacacaa	ctatggggat	tcaactggac	cagaagatca	taattcttta	catgctttca
ANDV NRC-6	aggacacaa	ctatggggat	tcaactggac	caaagatca	taatcctcta	catgctctca

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1205	1215	1225	1235	1245	1255	

SNV NM H10	tggggaagag	aggccgtgaa	tcacttccat	cttggagatg	atatggatcc	tgagcttagg
RIOMV HTN-	tggggaaag	aggcagtaa	tcacttccac	cttgggtgatg	acatggatcc	tgagcttaga
LANV 510B	tggggaaag	aggcagtaa	tcacttccac	cttgggtgatg	acatggatcc	tgagcttaga
CHOV 588	tggggaaaag	aagcagtaa	ccactttcac	cttgggtgatg	acatggatcc	tgagctaagg
JABV AKM96	tggggaaag	aagctgtcaa	ccatttccac	cttggagatg	acatggatcc	tgaattgagg
MAPV HV-97	tggggaaag	aggctgtgaa	tcatttccat	ctaggggatg	atatggatcc	agagctgagg
JUQV oIn19	tggggtaag	aagcagtaa	tcatttccat	ttgggagatg	atatggacc	agaactcagg
JUQV LH	tggggcaaag	aggcagtaa	ccacttccat	ctgggagatg	atatggacc	agaactcagg
PERV 14403	tggggaaag	aggctgtcaa	tcatttccat	cttgggtgatg	atatggatcc	tgagctcaga
MACV 13796	tggggtaag	aggctgtgaa	ccatttccat	cttgggtgatg	atatggatcc	tgaattgaga
ORNV O1229	tggggcaagg	aagcagtgaa	ccatttccat	cttgggtgatg	acatggatcc	tgagctcaga
ORNV AND N	tggggcaagg	aagcagtgaa	ccatttccat	cttgggtgatg	atatggatcc	tgagctcaga
LECV BMJ-N	tggggaaaag	aagcagtgaa	ccacttccat	cttgggggatg	atatggatcc	tgagcttaga
LECV BMJ-O	tgggggaaag	aagcagtgaa	ccactttcat	cttgggtgatg	atatggatcc	tgagctcaga
LECV Plata	tggggaaag	aagcagtaa	ccacttccat	cttgggtgatg	atatggatcc	tgagcttaga
LECV CO22-	tgggggaaag	aggcagtaa	tcactttcat	ctcgggtgatg	acatggatcc	tgagcttaga
LECV BA18-	tgggggaagg	aggcagtaa	tcactttcat	cttgggtgatg	atatggatcc	tgagcttaga
LECV BA18-	tgggggaagg	aggcagtgaa	tcactttcat	cttgggtgatg	atatggatcc	tgagcttaga
LECV ER19-	tgggggaagg	aggcagtaa	tcacttccat	cttgggtgatg	atatggatcc	tgagcttaga
LECV 22819	tgggggaagg	aggcagtaa	tcactttcat	cttgggtgatg	atatggatcc	tgagcttaga
BAV BA10-A	tggggcaagg	aagcagtgaa	ccatttccat	cttggcgatg	acatggacc	tgaactgagg
BAV BA16-L	tggggcaagg	aagcagtgaa	ccatttccat	cttgggtgacg	acatggacc	tgaactgagg
BAV BA02-C	tggggtaag	aagcagtgaa	ccatttccat	cttgggtgacg	acatggacc	tgaactgagg
BAV BA17-S	tggggcaagg	aagcagtgaa	ccatttccat	cttgggtgacg	atatggacc	tgaactgagg
BAV BA11-A	tggggcaagg	aagcagtgaa	ccatttccac	cttgggtgacg	acatggacc	tgaactgagg
BAV BA02-C	tggggcaagg	aagcagtgaa	ccatttccat	cttgggtgacg	acatggacc	tgaactgagg
BAV BA02-C	tggggcaagg	aagcagtgaa	ccatttccat	cttgggtgacg	acatggacc	tgaactgagg
BAV BA02-C	tggggcaagg	aagcagtgaa	ccatttccac	cttgggtgacg	acatggacc	tgaactgagg
BAV Hu3969	tggggcaagg	aagcagtgaa	ccatttccat	cttgggtgatg	acatggacc	tgaactgagg
ANDV CHI-9	tggggtaag	aagctgtgaa	tcacttccat	cttgggtgatg	atatggacc	tgaactcagg
ANDV AREB1	tggggtaag	aagctgtgaa	tcatttccat	cttgggtgatg	atatggacc	tgaactaagg
ANDV Epuye	tggggtaag	aagctgtgaa	tcatttccat	cttgggtgatg	atatggacc	tgaactaagg
ANDV Epili	tggggtaag	aagctgtgaa	tcatttccat	cttgggtgatg	atatggacc	tgaactaagg
ANDV NRC-2	tggggtaag	aagctgtgaa	tcatttccat	cttgggtgatg	atatggacc	tgaactgagg
ANDV NRC-4	tggggtaag	aagctgtgaa	tcatttccat	cttgggtgatg	atatggacc	tgaactaagg
ANDV NRC-6	tggggtaag	aagctgtgaa	tcatttccat	cttgggtgatg	atatggacc	tgaattaagg

.... ....	.... ....	.... ....	.... ....	.... ....	.... ....	.... ....
1265	1275	1285	1295	1305	1315	

SNV NM H10	gaacttgccc	agacccttgt	agatatcaag	gtcagggaaa	tctctaacca	agaaccactt
RIOMV HTN-	cagctggcac	agactctcat	tgatgcaaag	gtcaaagaga	tctctaataca	ggaacccta
LANV 510B	cagctggcac	agactctcat	tgatgcaaag	gtcaaagaga	tctctaataca	ggaacccta
CHOV 588	cagtttagcac	agtccttagt	tgacactaaa	gtgaaggaga	tttcaaacca	ggaaccttta
JABV AKM96	cagctagctc	aatcattaat	tgacagcaag	gttaaggaga	tttctaataca	agatccctta
MAPV HV-97	cagctagcac	agtcattgat	tgacaccaag	gtaaaagaga	tttccaacca	agagcctttg
JUQV oIn19	cagcttgctc	aatctctcat	tgacactaag	gtcaaggaga	tctccaacca	agagccatta
JUQV LH	cagcttgctc	aatctcttat	tgacactaag	gtcaaggaga	tttccaacca	agagccatta
PERV 14403	caactggctc	aagctttgat	tgacacaaaa	gtaaaggaga	tttctaacca	agagccattg

MACV 13796	caactagcac	aggctttaat	tgatactaaa	gtgaaggaga	tctcaaacca	ggagcctttg
ORNV 01229	caacttgctc	aatccttgat	tgataccaag	gttaaggaaa	tttcaaacca	agagccatta
ORNV AND N	caacttgctc	aatccttgat	tgataccaag	gttaaggaaa	tttcaaacca	agagccatta
LECV BMJ-N	cagcttgctc	agtctttgat	tgatactaa	gtgaaagaga	tttccaatca	agagccacta
LECV BMJ-O	cagctcgctc	aatccttgat	tgatactaa	gtgaaggaga	tttccaatca	agagccatta
LECV Plata	cagctagctc	agtctttgat	cgatactaa	gtgaaggaga	tttctaata	agagccactg
LECV CO22-	cagcttgctc	aatccttgat	tgacactaa	gtgaaggaga	tttccaatca	ggagccatta
LECV BA18-	cagcttgctc	agtccctgat	tgacactaa	gtgaaggaga	tttctaata	ggagccatta
LECV BA18-	cagcttgctc	agtccctgat	tgacactaa	gtgaaggaga	tttctaata	ggagccatta
LECV ER19-	cagcttgctc	agtccctaat	tgacaccaag	gtgaaggaga	tttccaatca	ggagccgta
LECV 22819	cagcttgctc	agtccctgat	tgacactaa	gtgaaggaga	tttccaatca	ggagccatta
BAV BA10-A	cagcttgctc	aatctttgat	tgatactaa	gtgaaggaga	tttcaaata	agagccattg
BAV BA16-L	cagcttgctc	aatctctgat	tgatactaa	gtgaaggaaa	tttcaaata	agagccattg
BAV BA02-C	cagcttgctc	aatctctgat	tgatactaa	gtgaaggaaa	tttcaaata	agagccattg
BAV BA17-S	cagcttgctc	aatctctgat	tgatactaa	gtgaaggaaa	tttcaaata	agagccattg
BAV BA11-A	cagcttgctc	aatctctgat	tgatactaa	gtgaaggaaa	tttcaaata	agagccatta
BAV BA02-C	cagcttgctc	aatctctgat	cgatactaa	gtgaaggaaa	tttcaaata	agagccactg
BAV BA02-C	cagcttgctc	aatctctgat	cgatactaa	gtgaaggaaa	tttcaaata	agagccactg
BAV BA02-C	cagcttgctc	aatctctgat	cgatactaa	gtgaaggaaa	tttcaaata	agagccattg
BAV Hu3969	cagcttgctc	aatctcttat	tgacactaa	gtgaaagaga	tttcaaata	agagccattg
ANDV CHI-9	cagctagcac	aatctctgat	cgatactaa	gtgaaggaga	tctcaaacca	agagccactt
ANDV AREB1	cagctagcac	aatccctgat	tgacaccaag	gtgaaggaga	tctcaaacca	agagccacta
ANDV Epuye	cagctagcac	aatccctgat	cgacaccaag	gtgaaggaga	tctcaaacca	agagccacta
ANDV Epili	cagctagcac	aatccctgat	tgacaccaag	gtgaaggaga	tctcaaacca	agagccacta
ANDV NRC-2	cagctagctc	aatccctgat	tgacaccaag	gtgaaggaga	tctcaaacca	agagccactt
ANDV NRC-4	cagctagctc	aatccctgat	tgacaccaag	gtgaaggaga	tctcaaacca	agagccactt
ANDV NRC-6	cagctagcac	aatccctgat	tgacaccaag	gtgaaggaga	tctcaaacca	agagccacta

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1325	1335	1345	1355	1365	1375

SNV NM H10	aaactttaag	tgggcagtaa	tcaacttata	ttcaggg---	----cattat	tataaccagg
RIOMV HTN-	aaactctaag	a-----	-----	-----	----aggcag	taggatcaat
LANV 510B	aaactctaag	a-----	-----	-----	----aggcag	taggatcaat
CHOV 588	aagctttaaa	tgtgga---	-----	-----	----tggtta	aagggctgat
JABV AKM96	aaactgtgag	ctatta---	----tgatg	tctg-----	----tgactg	aaaggatgat
MAPV HV-97	aagttgtgag	tc-----	-----	-----	agactggtag	taaagattga
JUQV oln19	aaactgtag	tgct-----	-----	-----	tcaaaacggt	gggaaggtaa
JUQV LH	aaactgtagg	tgct-----	-----	-----	ctacaattat	gaaggtg-aa
PERV 14403	aaattgtaag	tg-----	-----	-----	-----gat	aagggcagta
MACV 13796	aagctgtaag	tgtcaa---	----gggtg	taggg-----	----tggtgt	ttagtcttaa
ORNV 01229	aagctgtaag	agcc-a----	----taatt	ataagagcca	tta-tgctat	gagagcgaaa
ORNV AND N	aagctgtaag	agcc-a----	----taatt	ataagagcca	tta-tgctat	gagagccaaa
LECV BMJ-N	aagctgtaag	agccaa---	----caact	agtaaagcca	tcaactgcca	aagagccaat
LECV BMJ-O	aagctgtgag	agttga---	----aact	atcaaagcca	tcaactgcca	aggagccaat
LECV Plata	aagctgtaag	agctca---	----caact	ttcagagcca	tcaactgctat	aagagccaaa
LECV CO22-	aagctgtaag	agctga---	----aaaat	ttaagagcca	tcaactgcca	aagagccaga
LECV BA18-	aagctgtaag	agctga---	----taaat	ttaagagcca	tcaactgcca	gagagccaga
LECV BA18-	aagctgtaag	agctga---	----taaac	ttaagagcca	tcaactgcca	aagagccaga
LECV ER19-	aagctgtaag	agctaa---	----taaat	ttaagagcca	tcaactgcca	aagagccaga
LECV 22819	aagctgtaag	agctag---	----taaat	ttaagagcca	tcaactgcca	aagagccaga
BAV BA10-A	aagttgtaag	agccaa---	----caaca	tgtagg----	----tgctac	agtaactgga
BAV BA16-L	aagctgtaag	agccaa---	----caaca	tgtagg----	----tgctac	agtaactgga
BAV BA02-C	aagctgtaag	agccaa---	----cagca	tgtagg----	----tgctac	agtaactgga
BAV BA17-S	aagctgtaag	agccaa---	----caaca	tgtagg----	----tgctac	agtaactgga
BAV BA11-A	aagctgtaag	agccaa---	----caaca	tgtagg----	----tgctac	agtaactgga
BAV BA02-C	aagctgtaag	agccaa---	----caaca	tgtagg----	----tgctac	agtaactgga
BAV BA02-C	aagctgtaag	agccaa---	----caaca	tgtagg----	----tgctac	agtaactgga
BAV BA02-C	aagctgtaag	agccaa---	----caaca	tgtagg----	----tgctac	agtaactgga
BAV Hu3969	aagctgtaag	agccaa---	----caaca	tgtagg----	----tgctag	agtaactgga
ANDV CHI-9	aagttgtag	tgct-----	-----	-----	-taatgaaat	catgattgaa
ANDV AREB1	aagttataaa	tact-----	-----	-----	-tgatgaaag	tatgattgaa
ANDV Epuye	aagttgtaaa	tact-----	-----	-----	-taatgaaag	tatgattgaa
ANDV Epili	aagttgtaaa	tact-----	-----	-----	-taatgaaag	tatgattgaa
ANDV NRC-2	aagttgtaag	tgct-----	-----	-----	-taatgaaag	gataattgaa

ANDV NRC-4	aagttg	aaag	tgct-----	-----	-----	-tgatgaaag	gatgattgaa
ANDV NRC-6	aagttg	aaa	tact-----	-----	-----	-taatgaaag	tatgattgaa

  

	.... ....	.... ....	.... ....	.... ....	.... ....	.... ....	.... ....
	1385	1395	1405	1415	1425	1435	

  

SNV NM H10	-----	-----gta	atgggcacta	atcagggttt	attgcactag	gggtgggttca
RIOMV HTN-	-----	-----g	attgtggtat	gtgagggctt	tccgggct--	--tgtgcca-
LANV 510B	-----	-----g	attgtggtat	gtgagggctt	tccgggct--	--tgtgcca-
CHOV 588	-----	-----	-----	--gagggctt	tctgggct--	--tgtgccaa
JABV AKM96	-----	-----	-----	--agagggct	cctggggc--	--tgtgccat
MAPV HV-97	-----	-----	-----	----gggctt	tccgggct--	--tgtgccaa
JUQV oln19	-----	-----	-----	gtgaaggcgt	tccgggct--	--tgagccaa
JUQV LH	-----	-----	-----	gtgaaggcgt	tccgggct--	--tgagccaa
PERV 14403	-----	-----	--tgatgctt	ggacgg-ttt	tccgggct--	--tgtgccac
MACV 13796	-----	-----	-----t	gatgggtttt	caggggct--	--tgtgccat
ORNV O1229	atagtttaca	tcttgatggt	tatatcagtc	agacgg-ctt	tccgggct--	--tgtgccac
ORNV AND N	atagtttaca	tcttgatggt	tatatcactc	agatgg-ctt	tccgggct--	--tgtgccac
LECV BMJ-N	accagtcaag	atctatggat	tatgttagtt	agatggattt	tctgggct--	--tgtgccaa
LECV BMJ-O	actagttgat	atctaagaat	caggttggtt	agatggattt	tctgggct--	--tgtgccaa
LECV Plata	--tagttaat	atctggagat	gctgttggtt	aggtgggttt	tccgggct--	--tgtgccac
LECV CO22-	actagtcaat	atctgaagat	tatgttgatt	gggtggattt	ccggggct--	--tgtgccac
LECV BA18-	actagtcaat	atctgaaaat	tatgttagtt	gggtggattt	tccgggct--	--tgtgccac
LECV BA18-	actagtcaat	atctgaagat	tatgttggtt	gggtggattt	tccgggct--	--tgtgccac
LECV ER19-	actagtcaat	atctgaaggt	tatgttggtt	gggtggagtt	tccgggct--	--tgtgccac
LECV 22819	actagtcaat	atctgaagat	tatgttggtt	gggtggattt	tccgggct--	--tgtgccac
BAV BA10-A	-----	-----	----taggtt	gggtgggtctt	tctgggct--	--tgagccac
BAV BA16-L	-----	-----	----taggtt	ggatgggtctt	tctgggct--	--tgagccac
BAV BA02-C	-----	-----	----taggtt	ggatgggtctt	tctgggct--	--tgagccac
BAV BA17-S	-----	-----	----taggtt	ggatgggtctt	tctgggct--	--tgagccac
BAV BA11-A	-----	-----	----taggtt	ggatgggtctt	tctgggct--	--tgagccac
BAV BA02-C	-----	-----	----taggtt	ggatgggtctt	tctgggct--	--tgagccac
BAV BA02-C	-----	-----	----taggtt	ggatgggtctt	tctgggct--	--tgagccac
BAV BA02-C	-----	-----	----taggtt	ggatgggtctt	tctgggct--	--tgagccac
BAV Hu3969	-----	-----	----taggtt	ggatgggtctt	tctgggct--	--tgagccac
ANDV CHI-9	-----	-----	-----	-gaaagactt	tccgggct--	--tgtgccac
ANDV AREB1	-----	-----	-----	-gagagactt	tccgggct--	--tgtgccac
ANDV Epuye	-----	-----	-----	-gagagactt	tccgggct--	--tgtgccac
ANDV Epili	-----	-----	-----	-gagagactt	tccgggct--	--tgtgccac
ANDV NRC-2	-----	-----	-----	-gaaagactt	tccgggct--	--tgtgccac
ANDV NRC-4	-----	-----	-----	-gaaagactt	tccgggct--	--tgtgccac
ANDV NRC-6	-----	-----	-----	-gagagactt	tccgggct--	--tgtgccac

  

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	1445	1455	1465	1475	1485	1495

  

SNV NM H10	agggcccaatt	atatcacagg	gtatataatc	tatattgttt	agtgttattg	-----
RIOMV HTN-	acattttattc	atctcagggc	-----	----tattct	gcactaatca	atgggtggga
LANV 510B	acattttattc	atctcagggc	-----	----tattct	gcactaatca	atgggtggga
CHOV 588	ata-ttaatc	atctcagggc	ttt----ac	actaatcggg	aatgtgacta	ctatcag---
JABV AKM96	a---ttaatc	atctcaatct	-----	----atctct	gacg-----	-----
MAPV HV-97	ttggt-----	-actcagggg	ct-----	----actgtc	taattaattg	cactgggttc
JUQV oln19	tcagttattc	atctcaggat	ct-----	----ttcctt	aatgtgacta	ctaagggt-
JUQV LH	tcagttattc	atctcaggat	ct-----	----ttcctt	aatgtgacta	ctaagggtt-
PERV 14403	acaattaatc	atctcagggc	-----	----ttt	actgtgaata	acagggttt-
MACV 13796	atgtttaatc	atctcagggg	c-----	----tgtct	actgtgatta	acaggggtg--
ORNV O1229	atattttaatc	atctcaggaa	-----	----ccttt	aatgtgatta	atacgggt--
ORNV AND N	atattttaatc	atctcaggaa	-----	----ccttt	aatgtgatta	atacgggt--
LECV BMJ-N	ttattttaatc	atctcaggac	-----	----tctct	aatgtgatta	atacgggt--
LECV BMJ-O	tcattttaatc	atctcaggac	-----	----tctct	aatgtgatta	atacgggt--
LECV Plata	atattttaatc	atctcaggat	-----	----ccttt	aatgtgatta	atacgggt--
LECV CO22-	ttattttaatc	atctcaggat	-----	----tcttt	aatgtgatta	atacgggt--
LECV BA18-	ttattttaatc	atctcaggat	-----	----tctct	aatgtgatta	atacgggt--
LECV BA18-	ttattttaatc	atctcaggat	-----	----tctct	aatgtgatta	atacgggt--
LECV ER19-	ttattttaatc	atctcaggat	-----	----tcttt	aatgtgatta	atacgggt--
LECV 22819	ttattttaatc	atctcaggat	-----	----tctct	aatgtgatta	atacgggt--

BAV BA10-A	atattttaatc	atctcaggac	-----	-----cttt	aatgtgatta	atgcgggc--
BAV BA16-L	atattttaatc	atctcaggac	-----	-----cttt	aatgtgatta	atgcgggg--
BAV BA02-C	atattttaatc	atctcaggac	-----	-----cttt	aatgtgatta	atgcgggg--
BAV BA17-S	atattttaatc	atctcaggac	-----	-----cttt	aatgtgatta	atgcgggg--
BAV BA11-A	atattttaatc	atctcaagac	-----	-----cttt	aatgtaatta	atgcgggg--
BAV BA02-C	atattttaatc	atctcaggac	-----	-----cttt	aatgtgatta	atgcgggg--
BAV BA02-C	atattttaatc	atctcaggac	-----	-----cttt	aatgtgatta	atgcgggg--
BAV BA02-C	atattttaatc	atctcaggac	-----	-----cttt	aatgtgatta	atgcgggg--
BAV Hu3969	atattttaatc	atctcaggac	-----	-----cttt	aatgtgatta	atgcgggg--
ANDV CHI-9	ata-ttaatc	atctcaggac	ct-----	----atcctt	aatgtgatta	ataggggt--
ANDV AREB1	ata-ttaatc	atctcagaat	ct-----	----atcctt	aatgtgatta	ataggggt--
ANDV Epuye	ata-ttaatc	atctcaggat	ct-----	----atcctt	aatgtgatta	ataggggt--
ANDV Epili	ata-ttaatc	atctcaggat	ct-----	----atcctt	aatgtgatta	ataggggt--
ANDV NRC-2	ata-ttaatc	atctcaggac	ct-----	----atcctt	aatgtgatta	ataggggt--
ANDV NRC-4	ata-ttaatc	atctcaggac	ct-----	----atcctt	aatgtgatta	ataggggt--
ANDV NRC-6	ata-ttaatc	atctcaggat	ct-----	----atcctt	aatgtgatta	ataggggt--

.... ....	.... ....	.... ....	.... ....	.... ....	.... ....
1505	1515	1525	1535	1545	1555

SNV NM H10	-tag----ta	ttgtattatg	tattgttagt	taagcttatt	aaatcttggt	aagtttggtta
RIOMV HTN-	ttagtatcta	tgaatgtatg	ggtggtggg	-----	-----aatgt	catactactg
LANV 510B	ttagtatcta	tgaatgtatg	ggtggtggg	-----	-----aatgt	catactactg
CHOV 588	-----	ttacaatgtg	atgggtgggc	aa-----	----tgggtt	tattgcacta
JABV AKM96	-----	-----	-----	-----	-----	--ggtcatgt
MAPV HV-97	-----ct	ttataatgtg	atgggtgg--	-----	----gggtg	gtgattacta
JUQV oIn19	-----	ttattataag	ggtggttagat	ta-----	----gggtg	tttactatta
JUQV LH	-----	ttattataag	ggtggttagat	ta-----	----gggtg	tttactatta
PERV 14403	-----a	ttattataag	ggtggtgt--	-----	----tgggt	cttattacta
MACV 13796	-----	atattataag	ggtgggaagt	-----	----gggtt	t--actacta
ORNV O1229	-----	ttactatata	aggggtgg--	-----	----tgggt	tcaattacta
ORNV AND N	-----	ttactatata	aggggtgg--	-----	----tgggt	tcaattacta
LECV BMJ-N	-----	tgattatgag	ggtggtgagt	-----	----gggtt	tcaattacta
LECV BMJ-O	-----	tgatcatgag	ggtggttaagt	-----	----gggtt	tcatttacta
LECV Plata	-----	tgattataag	ggtggttaagt	-----	----gggtt	tcaattacta
LECV CO22-	-----	tgatcataag	ggtggttaagt	-----	----gggtt	tcaattacta
LECV BA18-	-----	tgattataag	ggtggttaagt	-----	----gggtt	tcatttacta
LECV BA18-	-----	tgattataag	ggtggttaagt	-----	----gggtt	tcaattacta
LECV ER19-	-----	tgattataag	ggtggttaagt	-----	----gggtt	tcaattacta
LECV 22819	-----	tgatcataag	ggtggttaagt	-----	----gggtt	tcaattacta
BAV BA10-A	-----	ttattataag	ggtggttaagt	-----	----gggtt	tcaattacta
BAV BA16-L	-----	ttattataag	ggtggttaagt	-----	----gggtt	tcaattacta
BAV BA02-C	-----	ttattataag	ggtggttaagt	-----	----gggtt	tcaattacta
BAV BA17-S	-----	ttattataag	ggtggttaagt	-----	----gggtt	tcaattacta
BAV BA11-A	-----	ttattataag	ggtggttaagt	-----	----gggtt	tcaattacta
BAV BA02-C	-----	ttattataag	ggtggttaagt	-----	----gggtt	tcaattacta
BAV BA02-C	-----	ttattataag	ggtggttaagt	-----	----gggtt	tcaattacta
BAV BA02-C	-----	ttattataag	ggtggttaagt	-----	----gggtt	tcaattacta
BAV Hu3969	-----	ttattataag	ggtggttaagt	-----	----gggtt	tcaattacta
ANDV CHI-9	-----	ttattataag	ggcagttaa-	-----	----tgggg	ttggttacta
ANDV AREB1	-----	ttattataag	ggcagttaa-	-----	----gggg	ttagatacta
ANDV Epuye	-----	ttattataag	ggcagttaa-	-----	----gggg	tcagatacta
ANDV Epili	-----	ttattataag	ggcagttaa-	-----	----gggg	tcagatacta
ANDV NRC-2	-----	ttattatagg	ggtggttaa-	-----	----gggg	tcagttacta
ANDV NRC-4	-----	ttattataag	ggcagttaa-	-----	----gggg	tcaattacta
ANDV NRC-6	-----	ttattataag	ggtggttaa-	-----	----gggg	tcagatacta

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1565	1575	1585	1595	1605	1615

SNV NM H10	ag-----	-ttttgttaa	gttgtattaa	gttttgttaa	gtttcggtaa	gtctgttaaa
RIOMV HTN-	atgggaggat	ttactgatac	gggtaaagaa	-----	-----	-----
LANV 510B	atgggaggat	ttactgatac	gggtaaagaa	-----	-----	-----
CHOV 588	at-----	-----tta	gggttaaggg	ccataattga	ttttagtagta	ttagataa--
JABV AKM96	at-----	-----tac	gggtatgggg	tggtttctta	cttattgcac	tagatatata
MAPV HV-97	a-----	-----	gggtaaaggg	ccacaatca-	-----	-----



JUQV oln19	at-----	-----ccg	ggtttatggg	ccactactg-	-----	-----
JUQV LH	at-----	-----ctg	ggtttatggg	ccactactg-	-----	-----
PERV 14403	at-----	-----tac	gggtaa----	--attacta-	---tttgcac	tattttttaa
MACV 13796	at-----	-----tac	gggt-----	----tactg-	tcctttgcac	tactatta--
ORNV O1229	ac-----	-----tac	gggtaagggg	acattaat--	--ctttgcac	tagggtta-a
ORNV AND N	ac-----	-----tac	gggtaagggg	acattaat--	--ctttgcac	tagggtta-a
LECV BMJ-N	ac-----	-----tac	gggtagggga	acactactg-	tcctttgcac	tagggtta-a
LECV BMJ-O	ac-----	-----aat	gggtaagggg	acactacta-	tcttttgcac	tagggtta-a
LECV Plata	ac-----	-----tac	gggtagggga	acactacta-	tcctttgcac	tagggtta-a
LECV CO22-	ac-----	-----tat	gggtggggga	acactacta-	tcctttgcac	tagggtta-a
LECV BA18-	ac-----	-----tgt	gggtatggga	acactacta-	tcctttgcac	tagggtta-a
LECV BA18-	ac-----	-----tgt	gggtatggga	acactacta-	tcctttgcac	tagggtta-a
LECV ER19-	ac-----	-----tgt	gggtatggga	acactacta-	tcctttgcac	tagggtta-a
LECV 22819	ac-----	-----ttt	gggtatggga	acactacta-	tcctttgcac	tagggtta-a
BAV BA10-A	ac-----	-----tac	gggtaaggg-	acactacta-	tcctttgcac	tggggtta-a
BAV BA16-L	ac-----	-----tac	gggtaaggg-	acactacta-	tcctttgcac	tggggtta-a
BAV BA02-C	ac-----	-----tac	gggtaaggg-	acactacta-	tcctttgcac	tggggtta-a
BAV BA17-S	ac-----	-----tac	gggtaaggg-	acactacta-	tcctttgcac	tggggtta-a
BAV BA11-A	ac-----	-----tac	gggtaaggg-	acactacta-	tcctttgcac	tggggtta-a
BAV BA02-C	ac-----	-----tac	gggtaaggg-	acactacta-	tcctttgcac	tggggtta-a
BAV BA02-C	ac-----	-----tac	gggtaaggg-	acactacta-	tcctttgcac	tggggtta-a
BAV BA02-C	ac-----	-----tac	gggtaaggg-	acactacta-	tcctttgcac	tggggtta-a
BAV Hu3969	ac-----	-----tac	gggtaaggg-	acactacta-	tcctttgcac	tggggtta-a
ANDV CHI-9	ac-----	-----tat	gggtaaggg	tcattacca-	-tttttgcac	tagggttaaa
ANDV AREB1	ac-----	-----tac	gggtaaggg	tcattactat	ccttttgcac	tagggttaaa
ANDV Epuye	ac-----	-----tac	gggtaaggg	tcattactat	ccttttgcac	tagggttaaa
ANDV Epili	ac-----	-----tac	gggtaaggg	tcattactat	ccttttgcac	tagggttaaa
ANDV NRC-2	ac-----	-----tac	gagtaaggg	tcattactan	ntttttgcac	tagggttaaa
ANDV NRC-4	ac-----	-----tac	gggtagggg	tcattactan	ttttttgcac	tagggttaaa
ANDV NRC-6	ac-----	-----tac	gggtaaggg	tcattactat	ccttttgcac	tagggttaaa

	.... ....	.... ....	.... ....	.... ....	.... ....	.... ....
	1625	1635	1645	1655	1665	1675
SNV NM H10	tg-----tag	ttaatcttga	tagtattaag	tcatatgtat	ggggggtgtt	tagt---gtt
RIOMV HTN-	-----tat	cagggatttg	tataac----	-aatcatcgt	aaaagatatt	tagt--ttat
LANV 510B	-----tat	cagggatttg	tataac----	-aatcatcgt	aaaagatatt	tagt--ttat
CHOV 588	-----	gtagattta	agtgatta-g	ttaagtttaa	gtaattagtt	aagtttaggt
JABV AKM96	taactgtga-	ttattatttg	cactagta-c	tgatgaatgt	aagggtggtt	t----cgat
MAPV HV-97	acactatcat	ctcatattta	atcagt----	-----	-----	---a---gat
JUQV oln19	-----	ttcttatttg	cactaa----	-gggggtgatg	gtggggagtt	att----ac
JUQV LH	-----	ttcttatttg	cactaa----	-aggggttaag	gtggggagta	att----at
PERV 14403	taa-----	-atatatttg	cactac----	-----	---agatttt	aa-----
MACV 13796	-----	aatacatttg	cactatt---	-gggggaaatg	gggatataca	tgta---gtc
ORNV O1229	gggtcattat	cttgtagttg	cactaca---	-ggggatttg	gatag-gggt	t-----
ORNV AND N	gggtcattat	ctttagattg	cactaca---	-ggggatcgg	gataggggtt	t-----
LECV BMJ-N	gggccattat	tatatatttg	cactac----	-tggggtagg	gttaggtgtt	a-----
LECV BMJ-O	gggccattat	tctatatattg	cactaa----	-tggggtaag	gttaaagtgt	a-----
LECV Plata	gggccattag	tatatatttg	cactac----	-taggattag	gggtaagtgt	a-----
LECV CO22-	gggccattac	tatatatttg	cactac----	-tggggttag	ggtaaatgtc	a-----
LECV BA18-	gggccactat	tatatatttg	cactac----	-tgggattag	ggtaaatgtt	a-----
LECV BA18-	gggccactat	tatatatttg	cactac----	-tggggttag	ggtaaatgtt	a-----
LECV ER19-	gggccactat	tatatatttg	cactac----	-tgggattag	ggtaaatgtt	a-----
LECV 22819	gggccactat	tatatatttg	cactac----	-tgggattag	ggtaaatgtt	a-----
BAV BA10-A	gggccattat	cttatatattg	cactact---	-tgggggttgg	gataatgggt	a-----
BAV BA16-L	gggtcattat	cttatatattg	cactact---	-tgggggttgg	gataatgggt	a-----
BAV BA02-C	gggccattat	cttatatattg	cactact---	-tgggggttgg	gataatgggt	a-----
BAV BA17-S	gggccattat	cttatatattg	cactact---	-tgggggttgg	gataatgggt	a-----
BAV BA11-A	gggccattat	cttatatattg	cactact---	-tgggggttgg	gataatgggt	a-----
BAV BA02-C	gggccattat	cttatatattg	cactact---	-tgggggttgg	gataatgggt	a-----
BAV BA02-C	gggccattat	cttatatattg	cactact---	-tgggggttgg	gataatgggt	a-----
BAV BA02-C	gggccattat	cttatatattg	cactact---	-tgggggttgg	gataatgggt	a-----
BAV Hu3969	gggccattat	cttatatattg	cactact---	-taggggttgg	gataatgggt	a-----
ANDV CHI-9	gggccactac	attgtatttg	cactaa----	-ggggaaatgg	gaggtgggtt	agt-----tt
ANDV AREB1	gggccactac	attgtatttg	cactac----	-ggggaaatgg	gaggtgggtt	agt-----ct

ANDV Epuye	gggccactac	attgtatttg	cactac----	-gggaaatgg	gaggtggggt	agt-----ct
ANDV Epili	gggccactac	attgtatttg	cactac----	-gggaaatgg	gaggtggggt	agt-----ct
ANDV NRC-2	gggccactac	attgtatttg	cactac----	-gggaaatgg	gaggtggggt	agc-----tt
ANDV NRC-4	gggccactac	atcgtatttg	cactac----	-gggaaatgg	gaggtggggt	agt-----ct
ANDV NRC-6	gggccactac	attgtatttg	cactac----	-gggaaatgg	gaggtggggt	agt-----ct

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1685	1695	1705	1715	1725	1735

SNV NM H10	aagtcattgt	ttattgt-tt	attgttatct	-----gt	ttaatgctaa	gtctatatga
RIOMV HTN-	atattataga	attcatg---	-----	-----ag	ttaattacta	aactggttga
LANV 510B	atattataga	attcatg---	-----	-----ag	ttaattacta	aactggttga
CHOV 588	aattagttga	ggttaag-tg	atthaggtaa	----gttaag	ataattaaga	atat--ttag
JABV AKM96	atatccttagt	-----	-----	-----a	gtaatcataa	gttt-----g
MAPV HV-97	aagtaattgt	tgttaag---	-----	-----ac	ataggtgtaa	gttt-----
JUQV oln19	atattattggt	tactaga-tc	tta--tagat	t-----g	ataagtttag	gtttaagtag
JUQV LH	atattactggt	tactata-tt	atatgtagat	t-----g	ataagtttag	gattaagtag
PERV 14403	atactttata	tgttatc-cc	attattgtaa	tccatttaat	caaattaggt	gttt-----
MACV 13796	agtatgtatt	caatag-ta	ttcagtggt	-----	atcgttagtt	gttttagttgt
ORNV O1229	acattataat	ctatagg-tc	aata-----	----tatagg	ataggtataa	gtatgtatag
ORNV AND N	acattataat	ctatagg-tt	aata-----	----tatagg	ataggtataa	gtatgtatag
LECV BMJ-N	agtccatag-	ctttagg-ta	attgataagt	tagttataag	atagatttag	aaaa-----
LECV BMJ-O	agtccttag-	-tttaga-ta	attgataagt	tagttataag	ataga-ttag	aact-----
LECV Plata	agtttatagt	ttgtaat-ta	gtcgataaga	tagttataaa	gtagacatag	gaat-----
LECV CO22-	agttcatag-	tcccaat-ta	gttgataaga	tagtgataag	atagacatag	ggtt-----
LECV BA18-	agtccatagt	tttcagt-ta	gccgataaga	tagtgataag	atagacatag	gaat-----
LECV BA18-	agtccatagt	tttcaat-ta	gccgataaga	tagtgataag	atagacatag	gaat-----
LECV ER19-	agttcatagt	tttcaat-ta	gccgataaga	tagtgataag	atagacatag	gaat-----
LECV 22819	agtccatag-	tttcaag-ta	gccgataaga	tagtgataag	atagacatag	gaat-----
BAV BA10-A	gaattatagt	tcataag-tt	agcattgtaa	tagtcctagg	ttaagtatag	attt-----
BAV BA16-L	gaattatagt	ttataag-tt	agcattataa	tagtcctagg	ttaagtatag	gttt-----
BAV BA02-C	gaattatagt	tcataag-tt	agcattataa	tagtcctagg	ttaagtatag	gttt-----
BAV BA17-S	gaattatagt	tcataag-tt	agcattctaa	tagtcctagg	ttaagtatag	gttt-----
BAV BA11-A	gaattatagt	tcataag-tt	agcattctaa	tagtcctagg	ttaagtatag	gttt-----
BAV BA02-C	gaattatagt	tcataaa-tt	agcattataa	tagtcctagg	ttaagtatag	gttt-----
BAV BA02-C	gaattatagt	tcataaa-tt	agcattataa	tagtcctagg	ttaagtatag	gttt-----
BAV BA02-C	gaattatagt	tcataaa-tt	agcattataa	tagtcctagg	ttaagtatag	gttt-----
BAV Hu3969	ggatcatagt	tcataag-tt	agcattgtga	tagtcctagg	ttaagtatag	attt-----
ANDV CHI-9	gtatt-tagt	tgttaagttt	ttta-----	-----	-----	-----taa
ANDV AREB1	atattgtagt	tgttaag-tt	tttg-----	-----	-----	-----tac
ANDV Epuye	atattgtagt	tgttaag-tt	tttg-----	-----	-----	-----tac
ANDV Epili	atattgtagt	tgttaag-tt	tttg-----	-----	-----	-----tac
ANDV NRC-2	atattatagt	tgttaag-tt	tttg-----	-----	-----	-----tat
ANDV NRC-4	atattatagt	tgttaag-tt	tttg-----	-----	-----	-----tat
ANDV NRC-6	atattgtatt	tgttaag-tt	tttg-----	-----	-----	-----tac

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1745	1755	1765	1775	1785	1795

SNV NM H10	t--ttattaa	tcaaa---at	aagatttata	tacatagatt	tattttatat	acatagattt
RIOMV HTN-	ttat-----	-----ga	tttgatcata	t-----	-----	----ggtgct
LANV 510B	ttat-----	-----ga	tttgatcata	t-----	-----	----ggtgct
CHOV 588	ccgtatttac	tcattag-gt	ataagtcata	tatat-----	-----cag	atgtggtaat
JABV AKM96	ttatagtc	tcatt--tat	gtagttatg	tata-----	-----	----tgaat
MAPV HV-97	tctttgatgt	ttaat-----	----ctgta	t-----	-----	----gtaat
JUQV oln19	ccataattaa	ataggatcac	actggctata	t-----	-----	----aaaat
JUQV LH	ccataattat	gtagaatcat	actggctata	t-----	-----	----gagat
PERV 14403	---taagtaa	gtcat---ta	actagctgta	t-----	-----	----gaaat
MACV 13796	t--taggtaa	gtagc---ta	actagttgta	t-----	-----	----gaaat
ORNV O1229	tagtaagtat	ataag---ta	gatggccaaa	t-----	-----	----gaaat
ORNV AND N	tagtaagtat	ataag---ta	gatggccaaa	t-----	-----	----gaaat
LECV BMJ-N	---tgattaa	gtaga---ta	aatagccaga	t-----	-----	----gaagt
LECV BMJ-O	---tgattaa	gtgga---ta	aatagccaga	t-----	-----	----gacat
LECV Plata	---tgattaa	gtagg---ta	aatagccaga	t-----	-----	----gaaat
LECV CO22-	---tgattaa	gtaga---ta	gatagccaga	t-----	-----	----gaaat
LECV BA18-	---tgattaa	gtaga---ta	gatagccaga	t-----	-----	----gaaat

LECV BA18-	---tgattaa	gtaga---ta	gatagccaga	t-----	-----	----gaaat
LECV ER19-	---tgattaa	gtaga---ta	gatagccaaa	t-----	-----	----gaaat
LECV 22819	---tgattaa	gtaga---ta	gatagccaga	t-----	-----	----gaaat
BAV BA10-A	---tgattag	gtaag---ta	attagccata	t-----	-----	----gaaat
BAV BA16-L	---tgattag	gtaag---ca	attagccata	t-----	-----	----gaaat
BAV BA02-C	---tgattag	gtaag---ta	attagccata	t-----	-----	----gaaat
BAV BA17-S	---taattag	gtaag---ta	attagccata	t-----	-----	----gaaat
BAV BA11-A	---tgattag	gtaag---ta	attagccata	t-----	-----	----gaaat
BAV BA02-C	---tgattag	gtaag---ta	attagccata	t-----	-----	----gaaat
BAV BA02-C	---tgattag	gtaag---ta	attagccata	t-----	-----	----gaaat
BAV BA02-C	---tgattag	gtaag---ta	attagccata	t-----	-----	----gaaat
BAV Hu3969	---tgattag	gtaag---ta	attagccata	t-----	-----	----gaaat
ANDV CHI-9	tcatatgtta	atgag---ga	attagctata	t-----	-----	----gatat
ANDV AREB1	tcataggttt	ataag---ga	atcagctata	t-----	-----	----gagat
ANDV Epuye	tcataggttt	ataag---ga	atcagctata	t-----	-----	----gagat
ANDV Epili	tcataggttt	ataag---ga	atcagctata	t-----	-----	----gagat
ANDV NRC-2	tcataggtta	atagg---ga	atcagctata	t-----	-----	----gaaat
ANDV NRC-4	tcataggttg	ataag---ga	atcagctata	t-----	-----	----gaaat
ANDV NRC-6	tcataggttt	ataag---ga	atcagctata	t-----	-----	----gagat

	.... ....	.... ....	.... ....	.... ....	.... ....	.... ....
	1805	1815	1825	1835	1845	1855
SNV NM H10	attttatcaa	ctcattatca	tctctcatca	ttaatcaggg	tt-tataaaa	ttttctcagg
RIOMV HTN-	tgctgattga	tcaatgagta	a-acctgtca	tttatcacta	ctgtataatc	attagacatg
LANV 510B	tgctgattga	tcaatgagta	a-acctgtca	tttatcacta	ctgtataatc	attagacatg
CHOV 588	cttaggtagt	ttctatgggc	-----atca	tagatcattg	ggaaatgata	atcaatgaga
JABV AKM96	cactgatata	taa-----	-----tta	ttagttacat	-----	-----
MAPV HV-97	ctttagttta	t--gttaagt	-----gtt	ttgatcataa	---tgatgca	tattgctgag
JUQV oln19	taattgttga	ttggccggga	-----ttgt	tgtattct--	-----gtgta	tgtaggttca
JUQV LH	taattgttga	ttggccagaa	-----ttat	tatattaa--	-----gtgta	tgtaggttta
PERV 14403	cagtgattga	ccagctagg-	-----tta	ttaatta---	-----	--taatca--
MACV 13796	caataatcga	tcaact----	-----tag	ttagtca---	-----ttata	accaattata
ORNV O1229	cattgattga	atggctagag	-----tcaa	tgta-----	-----	--tgatt---
ORNV AND N	cattgattga	atggctagag	-----tcaa	tttat-----	-----	--tgatt---
LECV BMJ-N	cgttgattga	ttggctattg	-----ttg	ttaatcacc-	----atagga	tttagtt---
LECV BMJ-O	cattgattga	tggctattt	-----tta	ttaatcaat-	----atagga	tttaatc---
LECV Plata	cattgattga	ttggctatca	-----ttg	ttaatcat-	-----ag	gattagt---
LECV CO22-	cattgattga	ttggctatca	-----atg	ttaatcatt-	----atagga	tttagtt---
LECV BA18-	cactgattga	ttggctatca	-----atg	ttaatcatt-	----atagga	tatagtt---
LECV BA18-	cactgattga	ttggctatca	-----atg	ttaatcatt-	----atagga	tatagtt---
LECV ER19-	cactgattga	ttggctatca	-----atg	ttaatcatt-	----atagga	tatagtt---
LECV 22819	cactgattga	ttggctatca	-----atg	ttaatcatt-	----gtagga	tatagtt---
BAV BA10-A	caatgattga	ttggcttgca	-----ttta	ttgataat--	-----tagca	tttagtt---
BAV BA16-L	caatgattga	ttggcttgca	-----ttta	ttgataat--	-----tagca	tttaatt---
BAV BA02-C	caatgattga	ttggcttgca	-----ttta	ttgataat--	-----tagca	tttaatt---
BAV BA17-S	caatgattga	ttggcttgca	-----ttta	tcgataat--	-----tagca	tttaatt---
BAV BA11-A	caatgattga	ttggcttgta	-----ttta	tcgataat--	-----tagca	tttaatt---
BAV BA02-C	caatgattga	ttggcttgca	-----ttta	ttgataat--	-----tagca	tttaatt---
BAV BA02-C	caatgattga	ttggcttgca	-----ttta	ttgataat--	-----tagca	tttaatt---
BAV BA02-C	caatgattga	ttggcttgca	-----ttta	ttgataat--	-----tagca	tttaatt---
BAV Hu3969	caatgattga	ttggcttgca	-----ttta	ttgataat--	-----tagta	tttagtt---
ANDV CHI-9	cactgattga	ttggcta---	-----tttt	taggttaagt	---aattgta	gttaaata--
ANDV AREB1	cactgattga	ttggctattt	-----tttt	taggttaagt	---gattaca	tttaaata--
ANDV Epuye	cactgattga	ttggctattt	-----tttt	taggttaagt	---gattaca	tttaaata--
ANDV Epili	cactgattga	ttggctantt	-----tttt	taggttaagt	---gattaca	tttaaata--
ANDV NRC-2	cactgattga	ttggctattt	-----tttt	taggttaagt	---gattgca	tttaaata--
ANDV NRC-4	cactgattga	ttggctattt	-----tttt	taggttaagt	---gattgca	tttaaata--
ANDV NRC-6	cactgattga	ttggctattt	-----tttt	taggttaagt	---gattaca	tttaaata--

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	1865	1875	1885	1895	1905	1915
SNV NM H10	tctatcccta	tattggaaga	ttgttctatt	aaccgt----	-----tca	aactggaact
RIOMV HTN-	gt-----	-----	-----	-----aag	ttttatgtgt	aatcaattta
LANV 510B	gt-----	-----	-----	-----aag	ttttatgtgt	aatcaattta

CHOV 588	ctgactgct-	-----ga	tggggtgatt	acctgtgatc	tataaatttt	tgttaataact
JABV AKM96	-----	-----ga	-----	-----	---agtataa	tgtttattat
MAPV HV-97	ttg-----	-----	-----atc	aactgt-gta	ttagaaattg	tgttaatcat
JUQV oln19	t-----	-----	-----	-----a	tatactggta	agttgactat
JUQV LH	t-----	-----	-----	-----a	tatattgata	agtttactgt
PERV 14403	-----	-----	-----	-----	-----atta	tgccagtata
MACV 13796	tc-----	-----	-----	-----at	tatgccttta	agtcaagtta
ORNV 01229	-----	-----	-----	-----	-----ata	ggttaagtgt
ORNV AND N	-----	-----	-----	-----	-----ata	ggttaagtgt
LECV BMJ-N	-----	-----	-----	-----	-----tta	agttaagttt
LECV BMJ-O	-----	-----	-----	-----	-----tta	agttaagttt
LECV Plata	-----	-----	-----	-----	-----tta	agttaagttt
LECV CO22-	-----	-----	-----	-----	-----tta	agttaagttt
LECV BA18-	-----	-----	-----	-----	-----tta	agttaagttt
LECV BA18-	-----	-----	-----	-----	-----tta	agttaagttt
LECV ER19-	-----	-----	-----	-----	-----tta	agttaagttt
LECV 22819	-----	-----	-----	-----	-----tta	agttaagttt
BAV BA10-A	-----	-----	-----	-----	-----ata	gattaagttc
BAV BA16-L	-----	-----	-----	-----	-----gta	gattaagttt
BAV BA02-C	-----	-----	-----	-----	-----gta	gattaagttt
BAV BA17-S	-----	-----	-----	-----	-----gta	gattaagttt
BAV BA11-A	-----	-----	-----	-----	-----gta	gattaagttt
BAV BA02-C	-----	-----	-----	-----	-----gta	gattaagttt
BAV BA02-C	-----	-----	-----	-----	-----gta	gattaagttt
BAV BA02-C	-----	-----	-----	-----	-----gta	gattaagttt
BAV BA02-C	-----	-----	-----	-----	-----gta	gattaagttt
BAV Hu3969	-----	-----	-----	-----	-----ata	gattaagttc
ANDV CHI-9	-----	-----	-----	-----	-----gttg	tgttaag-tt
ANDV AREB1	-----	-----	-----	-----	-----gttg	tgttaagttt
ANDV Epuye	-----	-----	-----	-----	-----gttg	tgttaagttt
ANDV Epili	-----	-----	-----	-----	-----gttg	tgttaagttt
ANDV NRC-2	-----	-----	-----	-----	-----gttg	ttttaagttt
ANDV NRC-4	-----	-----	-----	-----	-----gtta	ttttaagttt
ANDV NRC-6	-----	-----	-----	-----	-----gttg	tgttaagttt

	.... ....	.... ....	.... ....	.... ....	.... ....	.... ....
	1925	1935	1945	1955	1965	1975
SNV NM H10	aac-----	-----actg	tgactctgta	a----agtcc	agattatatt	cacatctgta
RIOMV HTN-	aatttatggt	tgttcaactc	t---atttta	at---cattt	ataactaata	atcaggcata
LANV 510B	aatttatggt	tgttcaactc	t---atttta	at---cattt	ataactaata	atcaggcata
CHOV 588	gac-taatac	taatcattat	tatctcttta	t----aaat	gatatcaaac	taatgtttta
JABV AKM96	agttaagtaa	gaa-----	----atttta	a-----	-----	-----
MAPV HV-97	aat--atcaa	taaccatat-	----atccta	g--gtttagt	taagtaagtt	actaatt-ta
JUQV oln19	aatcaatgga	taatcatata	tcttgatta	gt---tttt	aaggttacta	acaaatcata
JUQV LH	aatcaatgga	taatcatata	tattttatta	gt---tggt	aaggttacta	acaaatcata
PERV 14403	atcatgtttg	tggt-----	--taattata	gtaataatcc	tgaatatatt	aacaat-ata
MACV 13796	aat-----	-----	-----	-----cat	tagatacact	aatacttata
ORNV 01229	tac-tattta	tgt-----	---attttta	g----gttt	aagatctact	aacaattatt
ORNV AND N	tac-tattta	tgt-----	---actttta	g----gttt	aagatctact	aacaattatt
LECV BMJ-N	aat-cattag	ga-----	----ttctta	g----gttt	aagataaact	aacagttatt
LECV BMJ-O	aat-tatcag	ta-----	----tcctta	g----gttt	aagataaact	aacaattatt
LECV Plata	gat-cattag	ta-----	----ccctta	g----gttt	aagataaact	aacaattatt
LECV CO22-	aat-tattag	ta-----	----ttcttc	at---ttttt	aagataaact	aacaattatt
LECV BA18-	aat-cattag	ca-----	----ttctta	gt---ttttt	aagataaact	aacaattatt
LECV BA18-	aat-cattag	ca-----	----ttctta	gt---ttttt	aagataaact	aacaattatt
LECV ER19-	aat-cattag	ca-----	----ttctta	gt---ttttt	aagataaact	aacaattatt
LECV 22819	aat-cattag	ca-----	----ttctta	gt---ttttt	aagatgaact	aacaattatt
BAV BA10-A	aat-tattaa	tg-----	----ttttta	g-----ggt	aagattaact	aacaatcatt
BAV BA16-L	aat-tgttaa	tg-----	----ttttta	g-----ggt	aagattaact	aacaatcatt
BAV BA02-C	aat-tgttaa	tg-----	----ttttta	g-----ggt	aagattaact	aacaatcatt
BAV BA17-S	aat-tgttaa	tg-----	----ttttta	g-----ggt	aagattaact	aacaatcatt
BAV BA11-A	aat-tgttaa	tg-----	----ttttta	g-----ggt	aagattaact	aacaatcatt
BAV BA02-C	aat-tgttaa	tg-----	----ttttta	g-----ggt	aagattaact	aacaatcatt
BAV BA02-C	aat-tgttaa	tg-----	----ttttta	g-----ggt	aagattaact	aacaatcatt
BAV BA02-C	aat-tgttaa	tg-----	----ttttta	g-----ggt	aagattaact	aacaatcatt

BAV Hu3969	aat-tggttaa	tg-----	----ttttta	g-----gtt	aagattaact	aacaatcatt
ANDV CHI-9	agtatgttaa	gg-----	----tttata	g-----gtt	aagatttact	aacaatcata
ANDV AREB1	agtatgttaa	gg-----	----cctata	g-----gtt	aagatctact	aacaattata
ANDV Epuye	agtgtgttaa	gg-----	----cctata	g-----gtt	aagatctact	aacaattata
ANDV Epili	agtgtgttaa	gg-----	----cctata	g-----gtt	aagatctact	aacaattata
ANDV NRC-2	agtatgttaa	gg-----	----cctata	g-----gtt	aagatctact	aacaattata
ANDV NRC-4	agtatgttaa	gg-----	----cctata	g-----gtt	aagatctact	aacaattata
ANDV NRC-6	agtgtgttaa	gg-----	----cctata	g-----gtt	aagatctact	aacaattata

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1985	1995	2005	2015	2025	2035

SNV NM H10	-----tatat	ggatgtaa	ttcgttccgt	taatagtaca	tgacactaat	gcttg-----
RIOMV HTN-	-----tt	agatgtaa	ttcattctca	gctta-----	-----t	gctttgca--
LANV 510B	-----tt	agatgtaa	ttcattctca	gctta-----	-----t	gctttgca--
CHOV 588	ttaatccatt	ggatgtaa	ttcgttctg-	-----	-----gctat	gcttt-----
JABV AKM96	-----ccttt	agatgtaa	ttcgttctcc	tgctt-----	-----agctt	gctttgca--
MAPV HV-97	aaactccaga	agatgtaa	ttcgttccat	gctt-----	-----tgct	gctttgctat
JUQV oln19	ctactcaa	agatgtac	ttcgttcaat	gccttg----	-----ctact	gcttc-----
JUQV LH	ctactcaa	agatgtaa	ttcgttcaat	gccttg----	-----ctact	gcttc-----
PERV 14403	ttatacca	agatgtaa	ttcattccat	gctt-----	-----tgct	gcttt-----
MACV 13796	tcttatcc	agatgtaa	ttcattccgt	gctt-----	-----tgct	gcttt-----
ORNV O1229	gtatgccact	agatgtaa	ttcgttcatt	gctt-----	-----tgct	gcttt-----
ORNV AND N	gtatgccact	agatgtaa	ttcgttcatt	gctt-----	-----tgct	gcttt-----
LECV BMJ-N	ataatccatt	ggatgtaa	ttcattcatt	gctt-----	-----tgct	gcttt-----
LECV BMJ-O	gtaatccatt	ggatgtaa	ttcgttcatt	gctt-----	-----tgct	gcttt-----
LECV Plata	ataatccatt	ggatgtaa	ttcgttcgtt	gctt-----	-----tgct	gcttt-----
LECV CO22-	ataactccatt	ggatgtaa	ttcgttcatt	gctt-----	-----tgct	gcttt-----
LECV BA18-	ataatccatt	ggatgtaa	ttcgttcact	gctt-----	-----tgct	gcttt-----
LECV BA18-	ataactccatt	ggatgtaa	ttcgttcatt	gctt-----	-----tgct	gcttt-----
LECV ER19-	ataatccatt	ggatgtaa	ttcgttcatt	gctt-----	-----tgct	gcttt-----
LECV 22819	ataatccact	ggatgtaa	ttcgttcatt	gctt-----	-----tgct	gcttt-----
BAV BA10-A	-tactctatt	ggatgtaa	ttcgttcatt	gctt-----	-----tgct	gc-ta-----
BAV BA16-L	-tactctatt	ggatgtaa	ttcgttcatt	gctt-----	-----tgct	gc-tt-----
BAV BA02-C	-tactctatt	ggatgtaa	ttcgttcatt	gctt-----	-----tgct	gc-tt-----
BAV BA17-S	-tactctatt	ggatgtaa	ttcgttcatt	gctt-----	-----tgct	gc-tt-----
BAV BA11-A	-tactctatt	ggatgtaa	ttcgttcatt	gctt-----	-----tgct	gc-tt-----
BAV BA02-C	-tactctatt	ggatgtaa	ttcgttcatt	gctt-----	-----tgct	gc-tt-----
BAV BA02-C	-tactctatt	ggatgtaa	ttcgttcatt	gctt-----	-----tgct	gc-tt-----
BAV BA02-C	-tactctatt	ggatgtaa	ttcgttcatt	gctt-----	-----tgct	gc-tt-----
BAV Hu3969	-tactccatt	ggatgtaa	ttcgttcatt	gctt-----	-----tgct	gc-tt-----
ANDV CHI-9	ttatgtcatt	agatgtaa	ttcattcctg	gcttg-----	-----cttct	gc-tt-----
ANDV AREB1	ttatgtcatt	ggatgtaa	ttcgttcctg	gcttg-----	-----cttct	gc-tt-----
ANDV Epuye	ttatgtcatt	ggatgtaa	ttcgttcctg	gcttg-----	-----cttct	gc-tt-----
ANDV Epili	ttatgtcatt	ggatgtaa	ttcattcctg	gcttg-----	-----cttct	gc-tt-----
ANDV NRC-2	ttatgtcatt	ggatgtaa	ttcgtttttg	gcatg-----	-----cttct	gc-tt-----
ANDV NRC-4	ttatgtcatt	ggatgtaa	ttcgttcttg	gcttg-----	-----cttct	gc-tt-----
ANDV NRC-6	ttatgtcatt	ggatgtaa	ttcgttcctg	gcttg-----	-----cttct	gc-tt-----

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2045	2055	2065	2075	2085	2095

SNV NM H10	-ctttgctac	taattgattt	cttcattaca	acaa-tctac	ctcattgt--	-ccctatccc
RIOMV HTN-	gcactaacac	taact-----	-----tac-	acatttctac	ctcaaccact	taccctcccc
LANV 510B	gcactaacac	taact-----	-----tac-	acatttctac	ctcaaccact	taccctcccc
CHOV 588	-gcttaatac	taacc-----	-----aca	acat-tctac	ctcatcccaa	cccctttccc
JABV AKM96	-----tctac	taa-----	-----caca	acat-tctac	ctcaacccea	aaccttcacc
MAPV HV-97	gccttttttac	taaca-----	-----tcaca	acaa--ctac	ctcatcccaa	atcccctccc
JUQV oln19	attgctatac	taaca-----	-----ctaca	acaacactac	ctcatccaca	-accctccc
JUQV LH	attgctatac	taaca-----	-----tcaca	acaacactac	ctcatccaca	-accctccc
PERV 14403	-gcgctatat	taacc-----	-----ttaca	acaaagctac	ctcatccata	-accctccc
MACV 13796	-atgctatac	taatc-----	-----ataa	acaaacctac	ctcatccaca	gacccttccc
ORNV O1229	-atgctatac	taacc-----	-----aca	acaa-actac	ctcatccaaa	-aacctccc
ORNV AND N	-atgctatac	taacc-----	-----aca	acaa-actac	ctcatccaaa	-aacctctc
LECV BMJ-N	-ttgctacac	taacc-----	-----aaca	acaacactac	ctcatcccaa	aaccttccc
LECV BMJ-O	-ctgctacac	taatt-----	-----caca	acaacactac	ctcatcccaa	aacctcccc

LECV Plata	-ttgctacac	taact-----	-----caca	acaaaactac	ctcatccaca	taccctccc
LECV CO22-	-ctgctatat	taact-----	-----caca	acaacactac	ctcatccaca	-aaccctccc
LECV BA18-	-ctgctatat	taact-----	-----caca	acaacactac	ctcatccaca	-accctccc
LECV BA18-	-ctgctatat	taact-----	-----caca	acaacactac	ctcatccaaa	-aaccctccc
LECV ER19-	-ctgctatat	taact-----	-----taca	acaacactac	ctcatccaca	-aaccctccc
LECV 22819	-ctgctatat	taact-----	-----caca	acaacactac	ctcatccaca	-aaccctccc
BAV BA10-A	-ctgccacac	gagcc-----	-----taca	acaaagctac	cgcatccact	-acgccaaact
BAV BA16-L	-ctgctacac	taacc-----	-----taca	acaaaactac	ctcatccact	-accctccc
BAV BA02-C	-ctgctacac	taacc-----	-----taca	acaaaactac	ctcatccact	-accctccc
BAV BA17-S	-ctgctacac	taacc-----	-----taca	acgaaactac	ctcatccact	-accctccc
BAV BA11-A	-ctgctacac	taacc-----	-----taca	acaaaactac	ctcatccact	-accctccc
BAV BA02-C	-ctgctacac	taacc-----	-----taca	acaaaactac	ctcatccact	-accctccc
BAV BA02-C	-ctgctacac	taacc-----	-----taca	acaaaactac	ctcatccact	-accctccc
BAV BA02-C	-ctgctacac	taacc-----	-----taca	acaaaactac	ctcatccact	-accctccc
BAV Hu3969	-ctgctacac	taacc-----	-----taca	acaaaactac	ctcatccact	-accctccc
ANDV CHI-9	-tcgcattgc	taacc-----	-----taca	acaagactac	ctcaccct	-accctccc
ANDV AREB1	-tcgcattgc	taacc-----	-----taca	acataactac	ctcatccaca	-aaccctccc
ANDV Epuye	-tcgcattgc	taacc-----	-----taca	acataactac	ctcatccaca	-caccctccc
ANDV Epili	-ttgcattgc	taacc-----	-----taca	acataactac	ctcatccaca	-aaccctccc
ANDV NRC-2	-tcgcattgc	taacc-----	-----taca	acataactac	ctcatccaca	-aaccctccc
ANDV NRC-4	-tcgcattgc	taacc-----	-----taca	acataactac	ctcatccaca	-aaccctccc
ANDV NRC-6	-tcgcattgc	taacc-----	-----taca	acataactac	ctcatccaca	-aaccctctc

	.... ....	.... ....	.... ....	.... ....	.... ....	.... ....
	2105	2115	2125	2135	2145	2155
SNV NM H10	cttccctatt	acctca----	acaaaactac	ctcattataa	gtaaattctt	gattgctttt
RIOMV HTN-	ttt--atact	acctca----	tttattctac	ctc-ataaat	tttctttctt	gattgctttt
LANV 510B	ttt--atact	acctca----	tttattctac	ctc-ataaat	tttctttctt	gattgctttt
CHOV 588	ttta-aaact	acctca----	attatactac	ctc-attagt	tttatctctt	gattgctttt
JABV AKM96	ctttaaact	acctca----	tttattctac	ctc-aatagt	gtgttttctt	gattgctttt
MAPV HV-97	cttt-atact	acctca----	attatactac	ctcataagtt	--ttattctt	gattgctttt
JUQV oIn19	ctt---aact	acctca----	acaa-actac	ctcaaataat	gctttttctt	gattgctttt
JUQV LH	ctt---aact	acctca----	acaatactac	ctc-aataat	gctttttctt	gattgctttt
PERV 14403	ctt---ttct	acctca---c	aacatactac	ctc-acattc	gatttttctt	gattgctttt
MACV 13796	tt-----tct	acctca--aa	aaaatactac	ctc-gaatat	gatttttctt	gattgcttct
ORNV O1229	ctt---ttct	acctcatctc	aataaaactac	ctc-aatttt	gatttttctt	gattgctttt
ORNV AND N	ctt---ttct	acctcatctc	aataaaactac	ctc-aatttt	gatttttctt	gattgctttt
LECV BMJ-N	ttt---atct	acctca---t	ataaaaactac	ctc-aatttc	gatttctctt	gattgctttt
LECV BMJ-O	ttt---atct	acctca---c	ataaaaactac	ctc-aatttc	gatttctctt	gattgctttt
LECV Plata	cta---ttct	acctcatctc	aataaaactac	ctc-aatttt	gatttttctt	gattgctttt
LECV CO22-	ctt---ttct	acctca---a	ataaaaactac	ctc-aatttc	gatttctctt	gattgctttt
LECV BA18-	ctt---ttct	acctca---a	ataaaaactac	ctc-aatttc	gatttctctt	gattgctttt
LECV BA18-	ctt---ttct	acctca---a	ataaaaactac	ctc-aatttt	gatttctctt	gattgc----
LECV ER19-	ctt---ttct	acctca---a	ataaaaactac	ctc-aatttc	gatttctctt	gattgctttt
LECV 22819	ctt---ttct	acctca---a	ataaaaactac	ctc-aattct	gatttctctt	gattgctttt
BAV BA10-A	ctt---atca	acctca---c	ataagaatac	ctc-aagtgc	aatttcac--	-----
BAV BA16-L	ctt---atct	acctca---a	ataaaaactac	ctc-aaattc	gatttctctt	gattgctttt
BAV BA02-C	ctt---atct	acctca---a	ataaaaactac	ctc-aaattc	gatttctctt	gctgtctc--
BAV BA17-S	ctt---atct	acctca---a	ataaaaactac	ctc-aaattc	gatttctctt	gattgcttga
BAV BA11-A	ctt---atct	acctca---a	ataaaaactac	ctc-aaattt	gatttctctt	gattgctttt
BAV BA02-C	ctt---atct	acctca---a	ataaaaactac	ctc-aaattc	gatttctctt	gattgctttt
BAV BA02-C	ctt---atct	acctca---a	ataaaaactac	ctc-aaattc	gatttctctt	gattgctttt
BAV BA02-C	ctt---atct	acctca---a	ataaaaactac	ctc-aaattc	gatttctctt	gattgctttt
BAV Hu3969	ctt---atct	acctca---a	ataaaaactac	ctc-acattc	gatttctctt	gattgctttt
ANDV CHI-9	cta---ttct	acctca---a	cacatactac	ctc-acattt	gatttttctt	gattgctttt
ANDV AREB1	cta---ttct	acctca---a	cacatactac	ctc-atattt	gatttttctt	gattgctttt
ANDV Epuye	cta---ttct	acctca---a	cacatactac	ctc-atattt	gatttttctt	gattgctttt
ANDV Epili	cta---ttct	acctca---a	cacatactac	ctc-atattt	gatttttctt	gattgctttt
ANDV NRC-2	cta---ttct	acctca---a	cacatactac	ctc-atattt	gatttttctt	gattgctttt
ANDV NRC-4	cta---ttct	acctca---a	cacatactac	ctc-atattt	gatttttctt	gattgctttt
ANDV NRC-6	cta---ttct	acctca---a	cacatactac	ctc-atattt	gatttttctt	gattgctttt

....|....|    ....|...  
2165                    2175

SNV NM H10	caaggagcat	actacta
RIOMV HTN-	caaggagcat	actacta
LANV 510B	caaggagcat	actacta
CHOV 588	caaggagcat	actacta
JABV AKM96	caaggagcat	actacta
MAPV HV-97	caaggagcat	actacta
JUQV oln19	caaggagcat	actacta
JUQV LH	caaggagcat	actacta
PERV 14403	caaggagcat	actacta
MACV 13796	caaggagcat	acta---
ORNV O1229	caaggagcat	actacta
ORNV AND N	caaggagcat	actacta
LECV BMJ-N	caaggagcat	aca----
LECV BMJ-O	caaggagcat	actacta
LECV Plata	caaggagcat	actacta
LECV CO22-	caaggagcat	actacta
LECV BA18-	c-----	-----
LECV BA18-	-----	-----
LECV ER19-	caaggag---	-----
LECV 22819	caaggagcat	actacta
BAV BA10-A	-----	-----
BAV BA16-L	caagg-----	-----
BAV BA02-C	-----	-----
BAV BA17-S	-----	-----
BAV BA11-A	ca-----	-----
BAV BA02-C	caaggagc--	-----
BAV BA02-C	caaggagc--	-----
BAV BA02-C	caaggagcat	actacca
BAV Hu3969	caaggagcat	actacta
ANDV CHI-9	caaggagcat	actactt
ANDV AREB1	caaggagcat	actacta
ANDV Epuye	ca-----	-----
ANDV Epili	caaggagcat	acna---
ANDV NRC-2	caa-----	-----
ANDV NRC-4	caaggagca-	-----
ANDV NRC-6	caaggagc--	-----