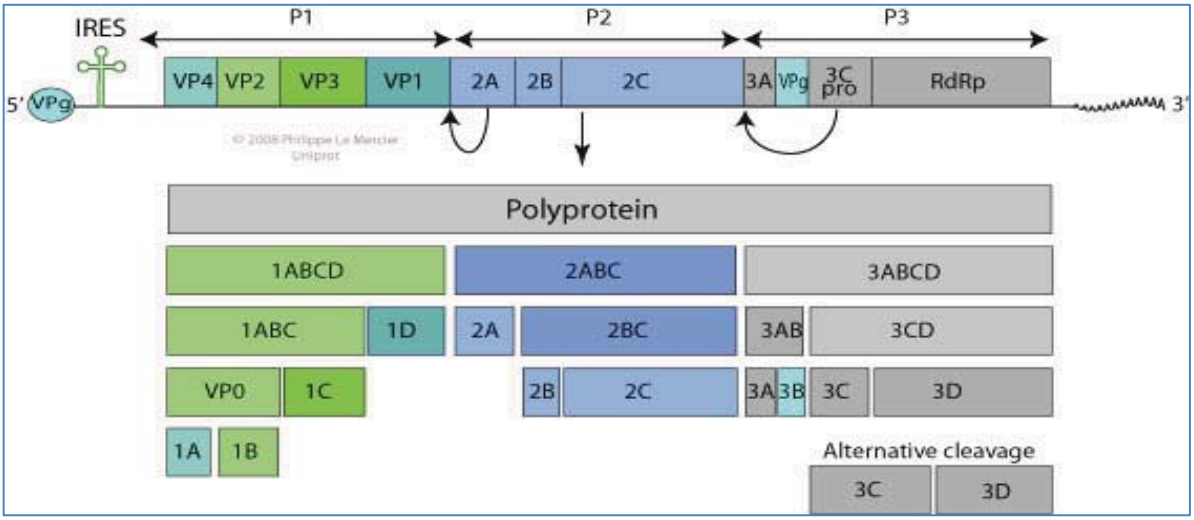

IRES
P1
P2
P3
5'
VPg
VP4
VP2
VP3
VP1
2A
2B
2C
3A
VPg
3C pro
RdRp
3'
Polyprotein
1ABCD
2ABC
3ABCD
1ABC
1D
2A
2BC
3AB
3CD
VP0
1C
2B
2C
3A
3B
3C
3D
1A
1B
Alternative cleavage
3C
3D

Figure 1

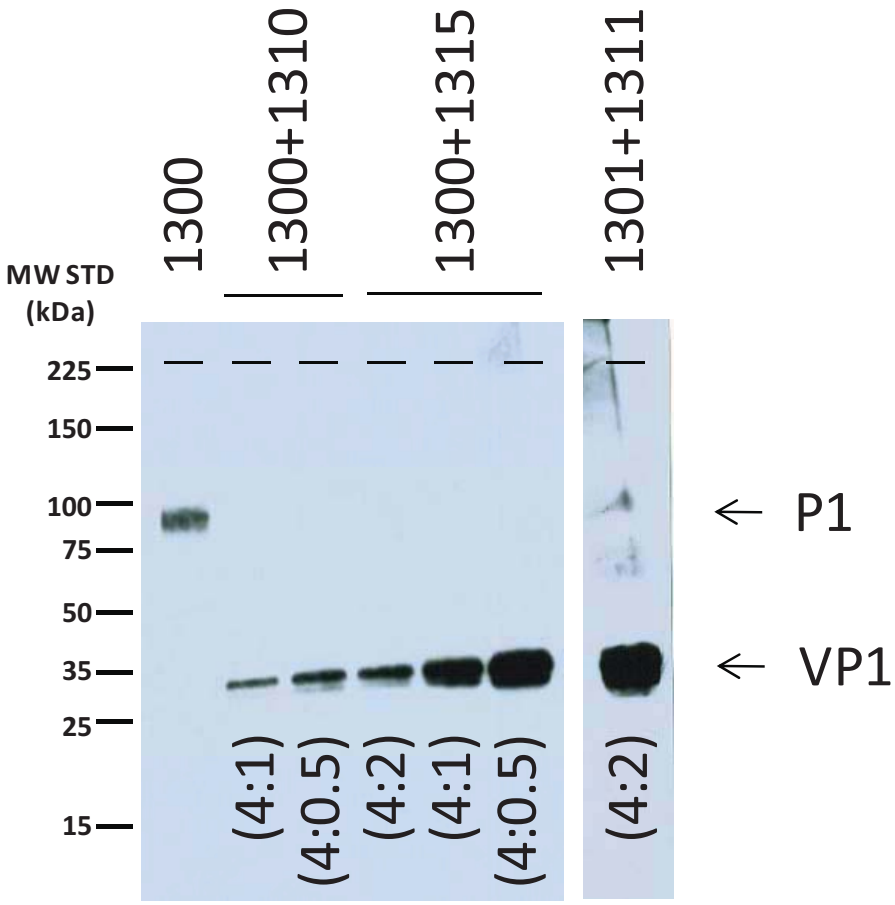

1300
1300+1310
1300+1315
1301+1311
MW STD
(kDa)
225
150
100
75
50
35
25
15
(4:1)
(4:0.5)
(4:2)
(4:1)
(4:0.5)
(4:2)
← P1
← VP1

Figure 2

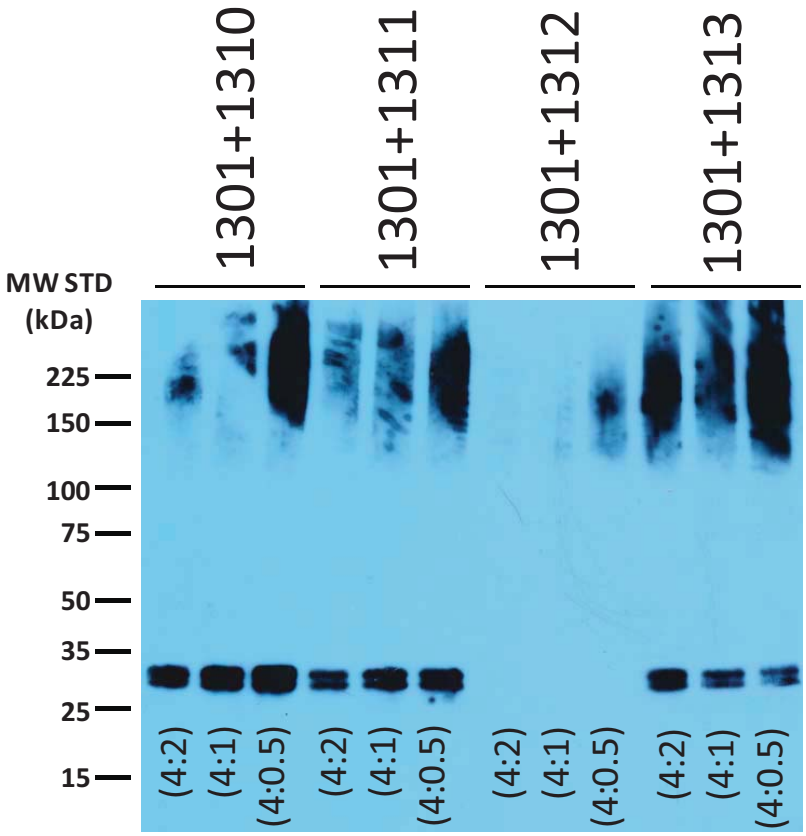

1301+1310
1301+1311
1301+1312
1301+1313
MW STD
(kDa)
225
150
100
75
50
35
25
15
(4:2)
(4:1)
(4:0.5)
(4:2)
(4:1)
(4:0.5)
(4:2)
(4:1)
(4:0.5)
(4:2)
(4:1)
(4:0.5)

Figure 3

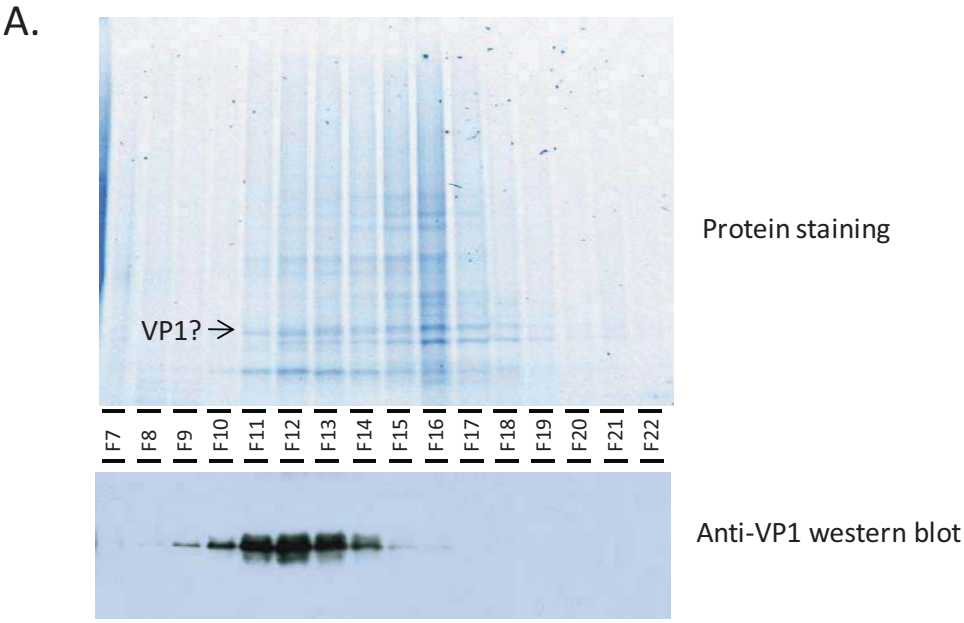
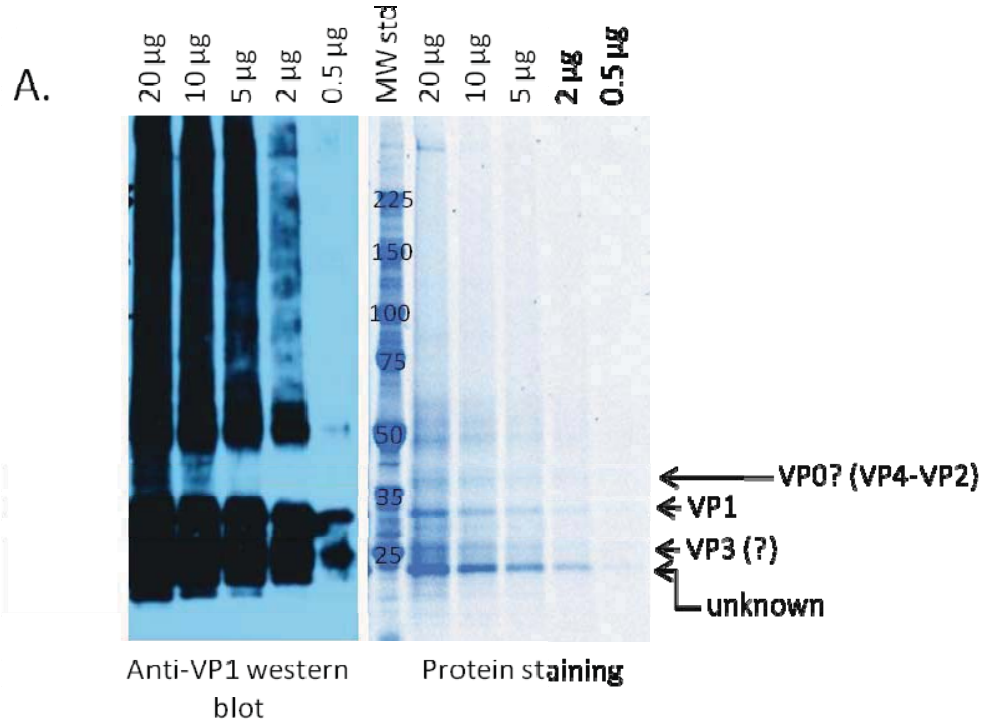

A.
VP1?
Protein staining
F7
F8
F9
F10
F11
F12
F13
F14
F15
F16
F17
F18
F19
F20
F21
F22
Anti-VP1 western blot
B.

Figure 4


A.
20 µg
10 µg
5 µg
2 µg
0.5 µg
MW std
20 µg
10 µg
5 µg
2 µg
0.5 µg
225
150
100
75
50
35
25
VP0? (VP4-VP2)
VP1
VP3 (?)
unknown
Anti-VP1 western blot
Protein staining

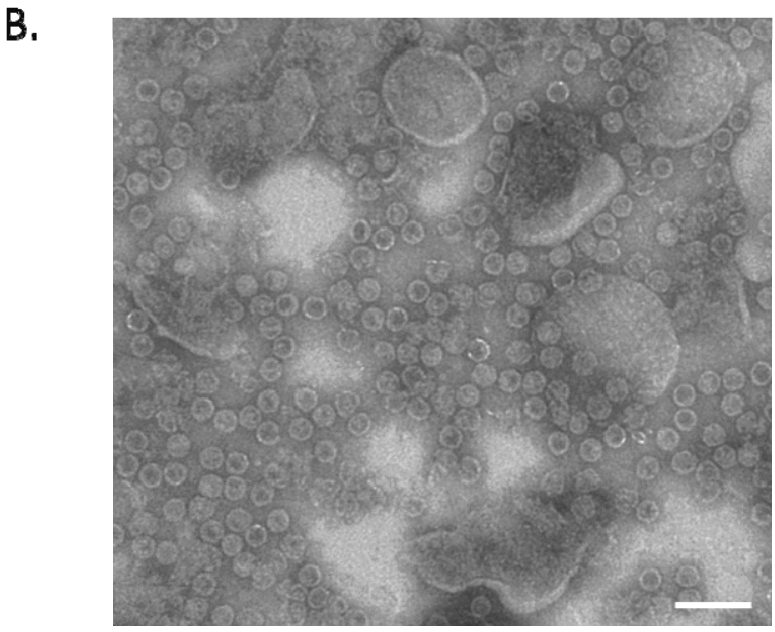

B.

Figure 5

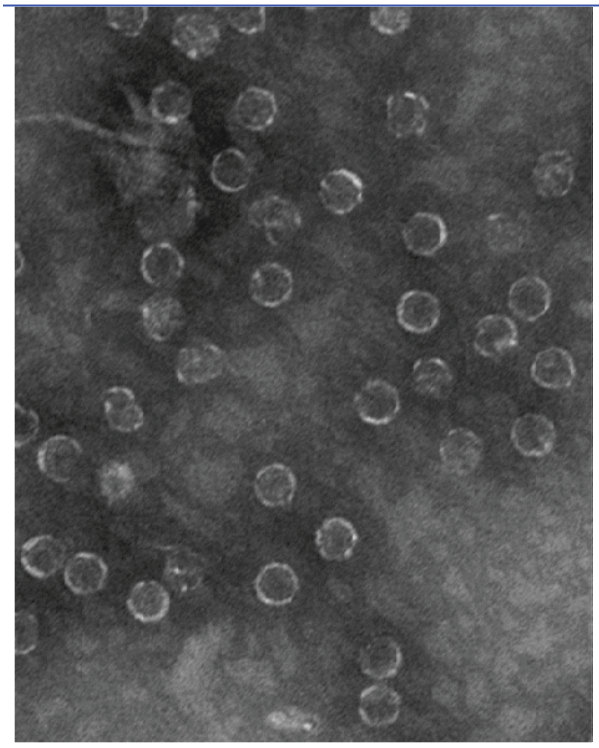


Figure 6

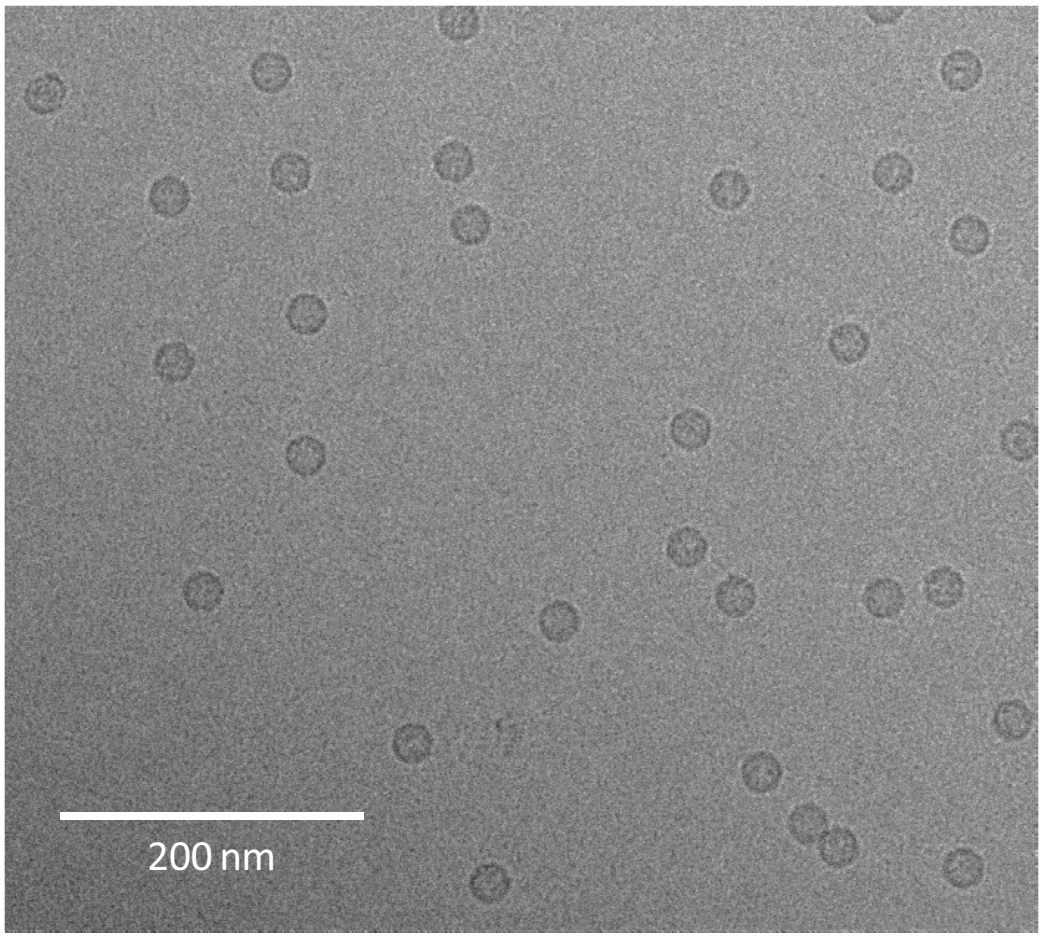


Figure 7

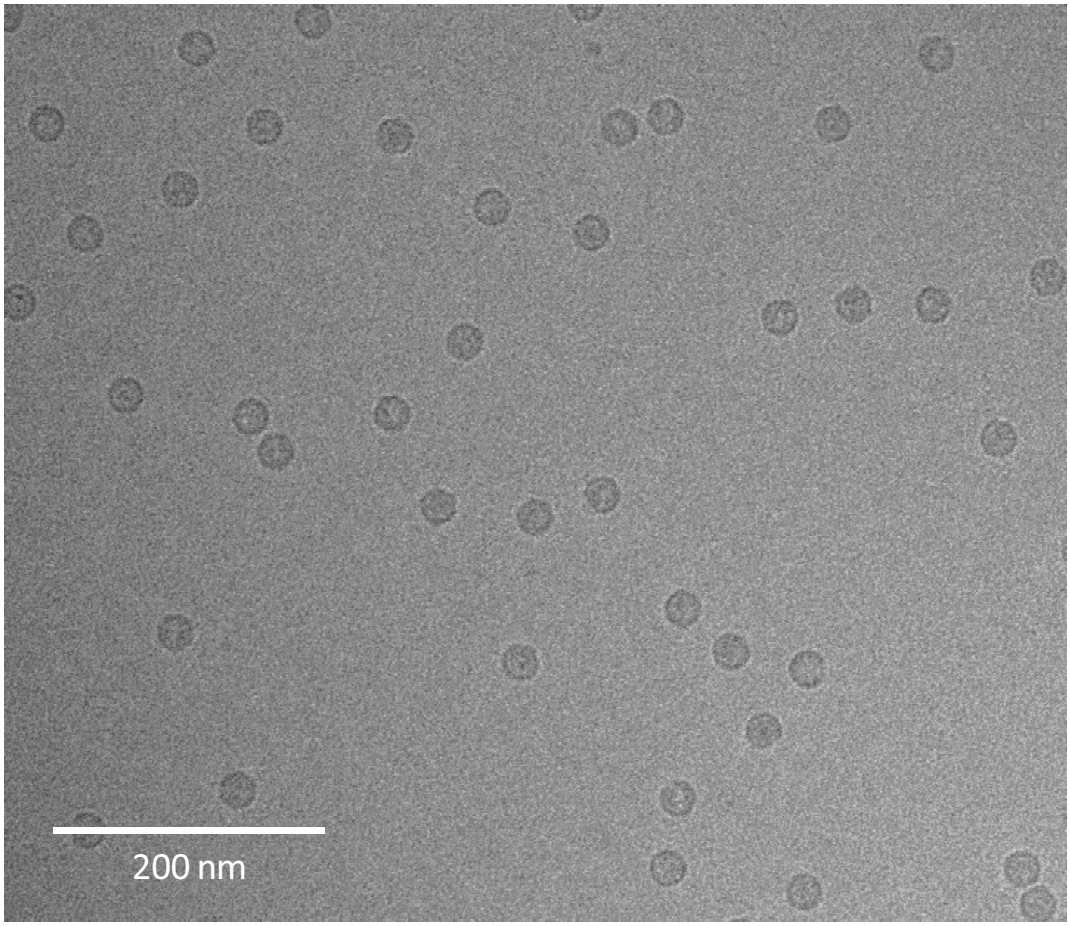


Figure 8

Figure 9A (SEQ ID NO: 1)

GPSLDFALSLLRRNVRQVQTDQGHFTMLGVRDRLAVLPRHSQPGKTIWIEHKLVNVLDA
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VVQYGFLNLSGKPTHRTMMYNFPTKAGQCGGVVTSVGKIIGIHIGGNGRQGFCAGLKRS
YFASEQGEIQWVKPNKETGRLNINGPTRTKLEPSVFHDIFEGNKEPAVLHSKDPRLEVD
FEQALFSKYVGNTLYEPDEYIKEAALHYANQLKQLEINTSQMSMEEACYGTENLEAIDL
HTSAGYPYSALGIKKRDILDPTTRDVSKMKFYMDKYGLDLPYSTYVKDELRSIDKIKKG
KSRLIEASSLNDSVYLRMAFGHLYEAFHANPGTITGSAVGCNPDTFWSKLPILLPGSLF
AFDYSGYDASLSPVWFRALELVLREIGYSEGAVSLIEGINHTHHVYRNKTYCVLGGMPS
GCSGTSIFNSMINNIIIRALLIKTFKGIDLDELNMVAYGDDVLASYPFPIDCLELAKTG
KEYGLTMTPADKSPCFNEVNWGNATFLKRGFLPDEQFPFLIHPTMPMREIHESIRWTKD
ARNTQDHVRSLCLLAWHNGKQEYEKFVSTIRSVPVGRALAIPNYENLRRNWLELF

Figure 9B (SEQ ID NO: 2)

GGCCCGAGCCTTGATTTTGCCCTCTCCCTACTGAGGAGGAACGTCAGGCAAGTCCAAAC
AGACCAGGGGCATTTCACCATGTTGGGTGTTAGGGATCGCTTAGCAGTCCTCCCACGCC
ACTCACAACCCGGCAAAACTATTTGGATTGAGCACAAACTCGTGAACGTCCTTGATGCA
GTTGAATTGGTGGATGAGCAAGGAGTCAACCTGGAGTTAACCCTCATCACTCTTGACAC
TAACGAAAAGTTTAGGGATATCACCAAATTCATCCCAGAAAATATTAGTGCTGCCAGTG
ATGCCACCCTAGTGATCAACACGGAGCACATGCCCTCAATGTTTGTCCCGGTGGGTGAC
GTTGTGCAGTATGGCTTCTTGAACCTCAGTGGCAAGCCTACCCATCGCACCATGATGTA
CAACTTTCCTACTAAAGCAGGACAGTGTGGGGGAGTGGTGACATCTGTTGGGAAGATTA
TCGGTATTCACATTGGTGGCAATGGCAGACAAGGTTTTTGCGCAGGCCTCAAAAGGAGT
TACTTTGCTAGTGAACAAGGAGAGATCCAGTGGGTTAAGCCCAATAAAGAAACTGGAAG
ACTCAACATCAATGGACCAACCCGCACCAAGCTAGAACCCAGTGTATTCCATGATATCT
TTGAGGGAAATAAGGAGCCAGCTGTCTTGCACAGTAAAGACCCCCGACTTGAGGTAGAT
TTTGAACAGGCCCTGTTCTCTAAGTATGTGGGGAATACACTATATGAGCCTGACGAGTA
CATCAAAGAGGCAGCTCTTCATTATGCAAACCAATTAAAGCAGCTAGAAATCAACACCT
CTCAAATGAGCATGGAGGAGGCCTGCTACGGTACTGAGAATCTTGAGGCTATTGATCTT
CATACTAGTGCAGGTTACCCCTATAGTGCCCTGGGGATAAAGAAAAGAGACATCTTAGA
CCCTACCACCAGGGACGTGAGTAAAATGAAGTTCTACATGGACAAATATGGTCTTGATC
TCCCTTACTCCACTTATGTCAAGGACGAGCTGCGCTCAATTGATAAAATTAAGAAAGGG
AAGTCCCGTCTGATTGAGGCCAGTAGTTTAAATGATTCAGTGTACCTTAGAATGGCTTT
CGGTCATTTGTATGAGGCTTTCCACGCAAATCCTGGGACTATAACTGGATCAGCCGTGG
GGTGTAACCCTGACACATTCTGGAGCAAGCTGCCAATTTTGCTCCCTGGTTCACTCTTT
GCCTTTGACTACTCAGGTTATGATGCTAGCCTTAGCCCTGTCTGGTTCAGAGCATTAGA
ATTGGTCCTTAGGGAGATAGGGTATAGTGAAGGGGCAGTCTCACTCATTGAGGGAATCA
ACCACACACACCATGTGTATCGTAATAAGACCTATTGTGTGCTTGGTGGGATGCCCTCA
GGCTGCTCGGGAACATCCATTTTCAACTCAATGATCAACAACATTATTATCAGAGCACT
GCTCATAAAAACATTTAAGGGCATTGATTTGGATGAACTCAACATGGTCGCTTATGGAG
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TTGGGGTAATGCGACCTTTCTCAAGAGGGGCTTTTTACCCGATGAACAGTTTCCATTTT
TGATCCACCCCACTATGCCAATGAGGGAGATCCATGAGTCCATTCGATGGACCAAGGAT
GCACGAAACACTCAAGATCATGTGCGGTCCTTGTGCCTCCTAGCATGGCATAATGGTAA

GCAAGAATATGAGAAATTTGTGAGTACAATTAGGTCTGTCCCAGTGGGAAGAGCGTTGG
CTATCCCAAATTATGAAAACCTTAGACGTAATTGGCTCGAGTTATTT

Figure 9C (SEQ ID NO: 3)

GPSLDFALSLLRRNIRQVQTDQGHFTMLGVRDRLAVLPRHSQPGKTIWIEHKLVNILDA
VELVDEQGVNLELTLITLDTNEKFRDITKFIPESISTASDATLVINTEHMPSMFVPVGD
VVQYGFLNLSGKPTHRTMMYNFPTKAGQCGGVVTSVGKVIGIHIGGNGRQGFCAGLKRS
YFASEQGEIQWVKPNKETGRLNINGPTRTKLEPSVFHDVFEGNKEPAVLHGKDPRLEVD
FEQALFSKYVGNTLYEPDEYIKEAALHYANQLKQLEINTSQMSMEEACYGTENLEAIDL
HTSAGYPYSALGIKKRDILDPTTRDVSKMKSYMDKYGLDLPYSTYVKDELRSIDKIKKG
KSRLIEASSLNDSVYLRMTFGHLYEAFHANPGTITGSAVGCNPDTFWSKLPILLPGSLF
AFDYSGYDASLSPVWFRALEMVLREIGYSEEAVSLIEGINHTHHVYRNKTYCVLGGMPS
GCSGTSIFNSMINNIIIRALLIKTFKGIDLDELNMVAYGDDVLASYPFPIDCLELAKTG
KEYGLTMTPADKSPCFNEVNWGNATFLKRGFLPDEQFPFLIHPTMPMREIHESIRWTKD
ARNTQDHVRSLCLLAWHNGKQEYEKFVSTIRSVPIGRALAIPNYENLRRNWLELF

Figure 9D (SEQ ID NO: 4)

GGCCCGAGTCTTGATTTTGCTCTCTCCCTGTTAAGGAGGAACATCAGGCAAGTCCAAAC
AGACCAGGGGCATTTCACCATGTTGGGTGTTAGGGATCGTTTAGCAGTCCTCCCACGTC
ACTCACAACCCGGCAAAACTATTTGGATCGAACACAAACTCGTGAACATTCTTGATGCA
GTTGAATTGGTGGATGAGCAAGGAGTCAACCTGGAATTGACCCTCATCACTCTTGACAC
TAACGAAAAGTTTAGGGATATCACCAAATTCATCCCAGAAAGTATTAGCACTGCCAGTG
ATGCCACCCTAGTGATCAACACGGAGCACATGCCCTCAATGTTTGTCCCGGTGGGTGAC
GTCGTGCAGTATGGCTTTTTGAATCTTAGTGGCAAGCCCACCCATCGCACCATGATGTA
CAACTTTCCTACTAAAGCGGGACAGTGTGGAGGAGTAGTGACATCTGTTGGGAAAGTCA
TCGGTATTCACATTGGTGGCAATGGTAGACAAGGTTTTTGCGCAGGCCTCAAAAGGAGT
TACTTTGCTAGTGAACAAGGGGAGATCCAGTGGGTTAAGCCCAATAAAGAAACTGGAAG
ACTCAACATCAATGGACCAACCCGCACCAAGTTGGAACCCAGTGTATTCCATGATGTCT
TCGAGGGAAATAAGGAACCAGCTGTCTTGCACGGCAAAGATCCCCGACTCGAGGTAGAT
TTTGAGCAGGCCCTGTTCTCTAAGTATGTGGGAAACACGCTATATGAGCCTGACGAGTA
CATCAAAGAGGCAGCTCTTCATTATGCAAATCAATTAAAGCAACTAGAAATTAATACCT
CCCAGATGAGCATGGAGGAAGCCTGCTATGGTACTGAGAATCTTGAGGCTATCGATCTT
CATACTAGTGCAGGTTACCCCTATAGTGCCCTGGGAATAAAGAAAAGAGACATCTTAGA
CCCTACCACCAGGGACGTGAGTAAAATGAAATCCTATATGGACAAATATGGTCTCGATC
TCCCTTACTCCACTTATGTCAAGGATGAGCTGCGCTCAATTGATAAAATTAAGAAAGGG
AAGTCCCGTCTGATCGAGGCCAGCAGTTTAAATGATTCAGTGTACCTCAGAATGACTTT
CGGTCATTTGTATGAGGCTTTCCACGCAAATCCTGGGACGATAACTGGATCAGCCGTGG
GGTGTAACCCTGACACATTCTGGAGCAAGCTGCCAATCTTGCTTCCTGGTTCACTCTTT
GCCTTTGACTACTCAGGTTATGATGCTAGCCTTAGCCCTGTCTGGTTCAGAGCATTAGA
AATGGTCCTTAGGGAGATAGGGTATAGTGAAGAGGCGGTCTCACTCATTGAGGGAATCA
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GGCTGTTCGGGAACATCCATCTTCAACTCAATGATCAACAACATTATTATCAGAGCACT
GCTCATAAAAACATTTAAGGGCATTGATTTGGATGAACTCAACATGGTCGCTTATGGGG
ATGATGTGCTTGCTAGCTACCCCTTCCCAATCGATTGCTTGGAGTTAGCAAAGACTGGC
AAGGAGTATGGTCTGACCATGACTCCTGCAGATAAGTCCCCTTGCTTTAATGAAGTTAA

TTGGGGTAATGCGACCTTCCTCAAGAGGGGCTTTTTACCTGATGAGCAGTTTCCATTTT
TGATCCACCCTACTATGCCAATGCGGGAGATCCATGAATCCATTCGATGGACTAAGGAC
GCACGAAACACTCAAGATCATGTACGGTCCTTGTGCCTCCTAGCATGGCATAATGGTAA
GCAAGAATATGAAAAATTTGTGAGCACAATTAGGTCTGTCCCAATAGGAAGAGCTTTGG
CTATCCCAAATTATGAAAATCTTAGACGCAATTGGCTCGAGTTATTT

Figure 9E (SEQ ID NO: 5)

MGSQVSTQRSGSHENSNSATEGSTINYTTINYYKDSYAATAGKQSLKQDPDKFANPVKD
IFTEMAAPLKSPSAEACGYSDRVAQLTIGNSTITTQEAANIIVGYGEWPSYCSDSDATA
VDKPTRPDVSVNRFYTLDTKLWEKSSKGWYWKFPDVLTETGVFGQNAQFHYLYRSGFCI
HVQCNASKFHQGALLVAVLPEYVIGTVAGGTGTEDSHPPYKQTQPGADGFELQHPYVLD
AGIPISQLTVCPHQWINLRTNNCATIIVPYINALPFDSALNHCNFGLLVVPISPLDYDQ
GATPVIPITITLAPMCSEFAGLRQAVTQGFPTELKPGTNQFLTTDDGVSAPILPNFHPT
PCIHIPGEVRNLLELCQVETILEVNNVPTNATSLMERLRFPVSAQAGKGELCAVFRADP
GRNGPWQSTLLGQLCGYYTQWSGSLEVTFMFTGSFMATGKMLIAYTPPGGPLPKDRATA
MLGTHVIWDFGLQSSVTLVIPWISNTHYRAHARDGVFDYYTTGLVSIWYQTNYVVPIGA
PNTAYIIALAAAQKNFTMKLCKDASDILQTGTIQGDRVADVIESSIGDSVSRALTQALP
APTGQNTQVSSHRLDTGKVPALQAAEIGASSNASDESMIETRCVLNSHSTAETTLDSFF
SRAGLVGEIDLPLEGTTNPNGYANWDIDITGYAQMRRKVELFTYMRFDAEFTFVACTPT
GEVVPQLLQYMFVPPGAPKPDSRESLAWQTATNPSVFVKLSDPPAQVSVPFMSPASAYQ
WFYDGYPTFGEHKQEKDLEYGACPNNMMGTFSVRTVGTSKSKYPLVVRIYMRMKHVRAW
IPRPMRNQNYLFKANPNYAGNSIKPTGTSRTAITTL

Figure 9F (SEQ ID NO: 6)

ATGGGTTCGCAGGTGTCCACGCAGCGCTCCGGTTCTCATGAAAATTCAAACTCAGCCAC
CGAGGGTTCCACCATAAACTACACCACCATTAATTATTACAAAGACTCCTATGCTGCCA
CAGCAGGCAAACAGAGTCTCAAGCAGGATCCAGACAAGTTTGCAAATCCTGTTAAAGAC
ATCTTCACTGAAATGGCAGCGCCACTGAAGTCCCCATCCGCTGAGGCATGTGGATACAG
TGATCGAGTAGCGCAATTAACTATTGGTAACTCCACCATCACCACGCAAGAAGCGGCTA
ACATCATAGTTGGTTATGGTGAGTGGCCTTCCTACTGCTCGGATTCTGACGCTACAGCA
GTGGATAAGCCAACGCGCCCGGATGTTTCAGTGAACAGGTTTTATACATTGGACACTAA
ATTGTGGGAGAAATCGTCCAAGGGATGGTACTGGAAATTCCCGGATGTGTTAACTGAAA
CTGGGGTTTTTGGGCAAAATGCACAATTCCACTACCTCTACCGATCAGGGTTCTGTATC
CACGTGCAGTGCAATGCTAGTAAATTCCACCAAGGAGCACTCCTAGTCGCTGTTCTACC
AGAGTACGTCATTGGGACAGTGGCAGGCGGCACAGGGACGGAAGATAGTCACCCCCCTT
ACAAGCAGACTCAACCCGGCGCCGATGGCTTCGAATTGCAACACCCGTACGTGCTTGAT
GCTGGCATCCCAATATCACAGTTAACAGTGTGCCCACATCAGTGGATTAATTTGAGAAC
CAACAATTGTGCTACAATAATAGTGCCATACATTAACGCACTGCCTTTTGATTCCGCCT
TGAACCACTGCAATTTTGGCCTATTAGTTGTGCCTATTAGCCCACTAGATTACGACCAA
GGAGCGACGCCAGTAATCCCTATAACTATCACATTAGCCCCAATGTGTTCTGAATTCGC
AGGTCTTAGGCAGGCAGTCACGCAAGGATTTCCCACCGAGTTGAAACCTGGCACAAATC
AATTTTTAACCACTGATGATGGCGTTTCAGCACCTATTCTACCAAACTTCCACCCCACC
CCGTGTATCCATATACCTGGTGAAGTTAGGAACTTGCTAGAGTTATGCCAGGTGGAAAC
CATTCTAGAGGTTAACAATGTGCCCACGAATGCCACTAGTTTAATGGAGAGACTGCGCT
TTCCAGTCTCAGCACAAGCAGGGAAAGGTGAGCTGTGTGCGGTGTTCAGAGCTGATCCT

GGGCGAAATGGGCCGTGGCAGTCCACCTTGCTGGGTCAGTTGTGTGGGTATTACACCCA
ATGGTCAGGATCATTGGAAGTCACCTTCATGTTTACTGGATCCTTTATGGCTACCGGCA
AGATGCTCATAGCCTATACACCGCCAGGAGGCCCTTTGCCCAAGGACCGGGCGACCGCC
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CCTAATACAGCCTATATAATAGCACTAGCGGCAGCCCAAAAGAATTTCACTATGAAGTT
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ATGTAATTGAAAGTTCCATAGGGGATAGCGTGAGCAGAGCCCTCACTCAAGCTCTACCA
GCACCCACAGGCCAGAACACACAGGTGAGCAGTCATCGACTGGATACAGGCAAGGTTCC
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TGTCAGACCCTCCAGCACAGGTTTCAGTACCATTCATGTCACCCGCGAGTGCTTACCAA
TGGTTCTATGACGGATATCCCACATTCGGGGAACACAAACAGGAGAAAGATCTTGAGTA
TGGGGCGTGCCCTAATAACATGATGGGTACGTTCTCAGTGCGGACTGTAGGGACTTCCA
AATCCAAGTATCCTTTAGTGGTTAGGATTTACATGAGGATGAAGCACGTCAGGGCGTGG
ATACCTCGCCCGATGCGTAACCAAAACTACCTATTCAAGGCCAACCCAAATTATGCTGG
CAACTCCATTAAGCCAACTGGTACTAGTCGCACAGCGATCACTACTCTT

Figure 9G (SEQ ID NO: 7)

GGACCAGGGTTCGATTACGCAGTGGCTATGGCTAAAAGAAACATTGTTACAGCAACTAC
TAGCAAGGGAGAGTTCACTATGTTAGGAGTCCACGACAACGTGGCTATTTTACCAACCC
ACGCTTCACCTGGTGAAAGCATTGTGATCGATGGCAAAGAAGTGGAGATCTTGGATGCC
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AAATGAAAAGTTCAGAGACATTAGACCACATATACCTACTCAAATCACTGAGACAAATG
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CAACTTTCCAACCAGAGCAGGACAGTGTGGTGGAGTCATCACATGTACTGGGAAAGTCA
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TACTTCACTCAGAGTCAAGGTGAAATCCAGTGGATGAGACCTTCGAAGGAAGTGGGATA
TCCAATCATAAATGCCCCGTCCAAAACCAAGCTTGAACCCAGTGCTTTCCACTATGTGT
TTGAAGGGGTGAAGGAACCAGCAGTCCTCACTAAAAACGATCCCAGGCTTAAGACAGAC
TTTGAGGAGGCAATTTTCTCCAAGTACGTGGGTAACAAAATTACTGAAGTGGATGAGTA
CATGAAAGAGGCAGTAGACCACTATGCTGGCCAGCTCATGTCACTAGACATCAACACAG
AACAAATGTGCTTGGAGGATGCCATGTATGGCACTGATGGTCTAGAAGCACTTGATTTG
TCCACCAGTGCTGGCTACCCTTATGTAGCAATGGGAAAGAAGAAGAGAGACATCTTGAA
CAAACAAACCAGAGACACTAAGGAAATGCAAAAACTGCTCGACACATATGGAATCAACC
TCCCACTGGTGACTTATGTAAAGGATGAACTTAGATCCAAAACAAAGGTTGAGCAGGGG
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GGTGCGATCCAGATTTGTTTTGGAGCAAAATTCCGGTATTGATGGAAGAGAAGCTGTTT

GCTTTTGACTACACAGGGTATGATGCATCTCTCAGCCCTGCTTGGTTCGAGGCACTAAA
GATGGTGCTTGAGAAAATCGGATTCGGAGACAGAGTTGACTACATCGACTACCTAAACC
ACTCACACCACCTGTACAAGAATAAAACATACTGTGTCAAGGGCGGTATGCCATCTGGC
TGCTCAGGCACTTCAATTTTTAACTCAATGATTAACAACTTGATTATCAGGACACTCTT
ACTGAAAACCTACAAGGGCATAGATTTAGACCACCTAAAAATGATTGCCTATGGTGATG
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GACTATGGACTAACTATGACTCCAGCTGACAAATCAGCTACATTTGAAACAGTCACATG
GGAGAATGTAACATTCTTGAAGAGATTCTTCAGGGCAGACGAGAAATACCCATTTCTTA
TTCATCCAGTAATGCCAATGAAGGAAATTCATGAATCAATTAGATGGACTAAAGATCCT
AGGAACACTCAGGATCACGTTCGCTCTCTGTGCCTTTTAGCTTGGCACAATGGCGAAGA
AGAATATAACAAATTCCTAGCTAAAATCAGGAGTGTGCCAATTGGAAGAGCTTTATTGC
TCCCAGAGTACTCAACATTGTACCGCCGTTGGCTTGACTCATTT

Figure 9H (SEQ ID NO: 8)

GPGFDYAVAMAKRNIVTATTSKGEFTMLGVHDNVAILPTHASPGESIVIDGKEVEILDA
KALEDQAGTNLEITIITLKRNEKFRDIRPHIPTQITETNDGVLIVNTSKYPNMYVPVGA
VTEQGYLNLGGRQTARTLMYNFPTRAGQCGGVITCTGKVIGMHVGGNGSHGFAAALKRS
YFTQSQGEIQWMRPSKEVGYPIINAPSKTKLEPSAFHYVFEGVKEPAVLTKNDPRLKTD
FEEAIFSKYVGNKITEVDEYMKEAVDHYAGQLMSLDINTEQMCLEDAMYGTDGLEALDL
STSAGYPYVAMGKKKRDILNKQTRDTKEMQKLLDTYGINLPLVTYVKDELRSKTKVEQG
KSRLIEASSLNDSVAMRMAFGNLYAAFHKNPGVITGSAVGCDPDLFWSKIPVLMEEKLF
AFDYTGYDASLSPAWFEALKMVLEKIGFGDRVDYIDYLNHSHHLYKNKTYCVKGGMPSG
CSGTSIFNSMINNLIIRTLLLKTYKGIDLDHLKMIAYGDDVIASYPHEVDASLLAQSGK
DYGLTMTPADKSATFETVTWENVTFLKRFFRADEKYPFLIHPVMPMKEIHESIRWTKDP
RNTQDHVRSLCLLAWHNGEEEYNKFLAKIRSVPIGRALLLPEYSTLYRRWLDSF

Figure 9I (SEQ ID NO: 9)

ATGGGTGCTCAGGTTTCATCACAGAAAGTGGGCGCACATGAAAACTCAAATAGAGCGTA
TGGTGGTTCTACCATTAATTACACCACCATTAATTATTATAGAGATTCAGCTAGTAACG
CGGCTTCGAAACAGGACTTCTCTCAAGACCCTTCCAAGTTCACCGAGCCCATCAAGGAT
GTCCTGATAAAAACAGCCCCAATGCTAAACTCGCCAAACATAGAGGCTTGCGGGTATAG
CGATAGAGTACTGCAATTAACACTGGGAAACTCCACTATAACCACACAGGAGGCGGCTA
ATTCAGTAGTCGCTTATGGGCGTTGGCCTGAATATCTGAGGGACAGCGAAGCCAATCCA
GTGGACCAGCCGACAGAACCAGACGTCGCTGCATGCAGGTTTTATACGCTAGACACCGT
GTCTTGGACGAAAGAGTCGCGAGGGTGGTGGTGGAAGTTGCCTGATGCACTGAGGGACA
TGGGACTCTTTGGGCAAAATATGTACTACCACTACCTAGGTAGGTCCGGGTACACCGTG
CATGTACAGTGTAACGCCTCCAAATTCCACCAGGGGGCACTAGGGGTATTCGCCGTACC
AGAGATGTGTCTGGCCGGGGATAGCAACACCACTACCATGCACACCAGCTATCAAAATG
CCAATCCTGGCGAGAAAGGAGGCACTTTCACGGGTACGTTCACTCCTGACAACAACCAG
ACATCACCTGCCCGCAGGTTCTGCCCGGTGGATTACCTCCTTGGAAATGGCACGTTGTT
GGGGAATGCCTTTGTGTTCCCGCACCAGATAATAAACCTACGGACCAACAACTGTGCTA
CACTGGTACTCCCTTACGTGAACTCCCTCTCGATAGATAGTATGGTAAAGCACAATAAT
TGGGGAATTGCAATATTACCATTGGCCCCATTAAATTTTGCTAGTGAGTCCTCCCCAGA
GATTCCAATCACCTTGACCATAGCCCCTATGTGCTGTGAGTTCAATGGATTAAGAAACA

TCACCCTGCCACGCTTACAGGGCCTGCCGGTCATGAACACCCCTGGTAGCAATCAATAT
CTTACTGCAGACAACTTCCAGTCACCGTGTGCGCTGCCTGAATTTGATGTGACCCCACC
TATTGACATACCCGGTGAAGTAAAGAACATGATGGAATTGGCAGAAATCGACACCATGA
TTCCCTTTGACTTAAGTGCCACAAAAAAGAACACCATGGAAATGTATAGGGTTCGGTTA
AGTGACAAACCACATACAGACGATCCCATACTCTGCCTGTCACTCTCTCCAGCTTCAGA
TCCTAGGTTGTCACATACTATGCTTGGAGAAATCCTAAATTACTACACACACTGGGCAG
GATCCCTGAAGTTCACGTTTCTGTTCTGTGGATTCATGATGGCAACTGGCAAACTGTTG
GTGTCATACGCGCCTCCTGGAGCCGACCCACCAAAGAAGCGTAAGGAGGCGATGTTGGG
AACACATGTGATCTGGGACATAGGACTGCAGTCCTCATGTACTATGGTAGTGCCATGGA
TTAGCAACACCACGTATCGGCAAACCATAGATGATAGTTTCACCGAAGGCGGATACATC
AGCGTCTTCTACCAAACTAGAATAGTCGTCCCTCTTTCGACACCCAGAGAGATGGACAT
CCTTGGTTTTGTGTCAGCGTGTAATGACTTCAGCGTGCGCTTGTTGCGAGATACCACAC
ATATAGAGCAAAAAGCGCTAGCACAGGGGTTAGGTCAGATGCTTGAAAGCATGATTGAC
AACACAGTCCGTGAAACGGTGGGGGCGGCAACATCTAGAGACGCTCTCCCAAACACTGA
AGCCAGTGGACCAACACACTCCAAGGAAATTCCGGCACTCACCGCAGTGGAAACTGGGG
CCACAAATCCACTAGTCCCTTCTGATACAGTGCAAACCAGACATGTTGTACAACATAGG
TCAAGGTCAGAGTCTAGCATAGAGTCTTTCTTCGCGCGGGGTGCATGCGTGACCATTAT
GACCGTGGATAACCCAGCTTCCACCACGAATAAGGATAAGCTATTTGCAGTGTGGAAGA
TCACTTATAAAGATACTGTCCAGTTACGGAGGAAATTGGAGTTCTTCACCTATTCTAGA
TTTGATATGGAACTTACCTTTGTGGTTACTGCAAATTTCACTGAGACTAACAATGGGCA
TGCCTTAAATCAAGTGTACCAAATTATGTACGTACCACCAGGCGCTCCAGTGCCCGAGA
AATGGGACGACTACACATGGCAAACCTCATCAAATCCATCAATCTTTTACACCTACGGA
ACAGCTCCAGCCCGGATCTCGGTACCGTATGTTGGTATTTCGAACGCCTATTCACACTT
TTACGACGGTTTTTCCAAAGTACCACTGAAGGACCAGTCGGCAGCACTAGGTGACTCCC
TTTATGGTGCAGCATCTCTAAATGACTTCGGTATTTTGGCTGTTAGAGTAGTCAATGAT
CACAACCCGACCAAGGTCACCTCCAAAATCAGAGTGTATCTAAAACCCAAACACATCAG
AGTCTGGTGCCCGCGTCCACCGAGGGCAGTGGCGTACTACGGCCCTGGAGTGGATTACA
AGGATGGTACGCTTACACCCCTCTCCACCAAGGATCTGACCACATAT

Figure 9J (SEQ ID NO: 10)

MGAQVSSQKVGAHENSNRAYGGSTINYTTINYYRDSASNAASKQDFSQDPSKFTEPIKD
VLIKTAPMLNSPNIEACGYSDRVLQLTLGNSTITTQEAANSVVAYGRWPEYLRDSEANP
VDQPTEPDVAACRFYTLDTVSWTKESRGWWWKLPDALRDMGLFGQNMYYHYLGRSGYTV
HVQCNASKFHQGALGVFAVPEMCLAGDSNTTTMHTSYQNANPGEKGGTFTGTFTPDNNQ
TSPARRFCPVDYLLGNGTLLGNAFVFPHQIINLRTNNCATLVLPYVNSLSIDSMVKHNN
WGIAILPLAPLNFASESSPEIPITLTIAPMCCEFNGLRNITLPRLQGLPVMNTPGSNQY
LTADNFQSPCALPEFDVTPPIDIPGEVKNMMELAEIDTMIPFDLSATKKNTMEMYRVRL
SDKPHTDDPILCLSLSPASDPRLSHTMLGEILNYYTHWAGSLKFTFLFCGFMMATGKLL
VSYAPPGADPPKKRKEAMLGTHVIWDIGLQSSCTMVVPWISNTTYRQTIDDSFTEGGYI
SVFYQTRIVVPLSTPREMDILGFVSACNDFSVRLLRDTTHIEQKALAQGLGQMLESMID
NTVRETVGAATSRDALPNTEASGPTHSKEIPALTAVETGATNPLVPSDTVQTRHVVQHR
SRSESSIESFFARGACVTIMTVDNPASTTNKDKLFAVWKITYKDTVQLRRKLEFFTYSR
FDMELTFVVTANFTETNNGHALNQVYQIMYVPPGAPVPEKWDDYTWQTSSNPSIFYTYG
TAPARISVPYVGISNAYSHFYDGFSKVPLKDQSAALGDSLYGAASLNDFGILAVRVVND
HNPTKVTSKIRVYLKPKHIRVWCPRPPRAVAYYGPGVDYKDGTLTPLSTKDLTTY