

SEQUENCE LISTING

<110> ORNA THERAPEUTICS, INC.

<120> CIRCULAR RNA COMPOSITIONS AND METHODS

<130> OBS-016W0

<140> PCT/US2021/033276

<141> 2021-05-19

<150> 63/027,292

<151> 2020-05-19

<160> 351

<170> PatentIn version 3.5

<210> 1

<211> 585

<212> DNA

<213> Unknown

<220>

<221> source

<223> /note="Description of Unknown:
Encephalomyocarditis virus sequence"

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aaacctggcc ctgtcttctt gacgagcatt cctaggggtc tttcccctct cgccaaagga	180
atgcaaggtc tgttgaatgt cgtgaaggaa gcagttcttc tggaagcttc ttgaagacaa	240
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tgcggccaaa agccacgtgt ataagataca cctgcaaagg cggcacaacc ccagtgccac	360
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gggctgaagg atgcccagaa ggtaccccat tgtatgggat ctgatctggg gcctcggtgc	480
acatgcttta catgtgttta gtcgaggtta aaaaacgtct agggcccccg aaccacgggg	540
acgtggtttt cctttgaaaa acacgatgat aatatggcca caacc	585

<210> 2

<211> 568

<212> DNA

<213> Unknown

<220>
 <221> source
 <223> /note="Description of Unknown:
 Encephalomyocarditis virus sequence"

<400> 2

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tgaccctgtc ttcttgacga acactcctag gggctcttcc cctctcgaca aaggagtgtg	180
aggctctgtt aatgtcgtga aggaagcagt tcctctggaa gcttcttaaa gacaaacaac	240
gtctgtagcg accctttgca ggcagcggaa cccccacct ggtgacaggt gcctctgcgg	300
ccaaaagcca cgtgtataag atacacctgc aaaggcggca caacccaggt gccacgttgt	360
gagttggata gttgtggaaa gagtcaaatg gctctcctca agcgtattca acaaggggct	420
gaaggatgcc cagaaggtag ccattgtat gggatctgat ctggggcctc ggtgcacgtg	480
ctttacacgt gttgagtcga ggtgaaaaaa cgtctaggcc cccgaacca cggggacgtg	540
gttttccttt gaaaaccacg attacaat	568

<210> 3
 <211> 696
 <212> DNA
 <213> Unknown

<220>
 <221> source
 <223> /note="Description of Unknown:
 Encephalomyocarditis virus sequence"

<400> 3

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gaaggctacg atagtccag ggcgggtact gccgtaagt ccaccccaaa caacaacaac	120
aaaacaaact cccctcccc ccccttacta tactggccga agccacttgg aataaggccg	180
gtgtgcgttt gtctacatgc tttttctac cgcattaccg tcttatggta atgtgagggt	240
ccagaacctg accctgtctt cttgacgaac actcctaggg gtctttcccc tctcgacaaa	300
ggagtgtgaa gtctgttgaa tgtcgtgaag gaagcagttc ctctggaagc ttcttaaaga	360
caaacaacgt ctgtagcgac cttttgcagg cagcgggaacc cccacctgg tgacaggtgc	420
ctctgcggcc aaaagccacg tgtataagat acacctgcaa aggcggcaca acccagtg	480

cacgttgtga gttggatagt tgtggaaaga gtcaaatggc tctcctcaag cgtattcaac	540
aaggggctga aggatgcccc gaaggtagcc cattgtatgg gatctgatct ggggcctcgg	600
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gggacgtggg tttcctttga aaaccacgat tacaat	696

<210> 4
 <211> 697
 <212> DNA
 <213> Unknown

<220>
 <221> source
 <223> /note="Description of Unknown:
 Encephalomyocarditis virus sequence"

<400> 4	
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gaaggctacg atagtgccag ggcgggtact gccgtaagtg ccacccccaa acaacaacaa	120
ccccccctct cctcctccc cccctaactg tactggccga agccgcttgg aataaggccg	180
gtgtgcgttt gtctatatgt tattttccac catattgccg tcttttggca atgtgagggc	240
ccggaacct ggccctgtct tcttgacgag cattcctagg ggtctttccc ctctcgccaa	300
aggaatgcaa ggtctgttga atgtcgtgaa ggaagcagtt cctctggaag cttcttgaag	360
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ccacgttgtg agttggatag ttgtggaaag agtcaaatgg ctctcctcaa gcgtattcaa	540
caaggggctg aaggatgccc agaaggtacc ccattgtatg ggatctgata tggggcctcg	600
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ggggacgtgg ttttcctttg aaaaacacga tgataat	697

<210> 5
 <211> 562
 <212> DNA
 <213> Unknown

<220>
 <221> source
 <223> /note="Description of Unknown:

Encephalomyocarditis virus sequence"

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tgtcttcttg acgagcattc ctaggggtct ttccctctc gccaaaggaa tgcaaggtct      180
gttgaatgtc gtgaaggaag cagttcctct ggaagcttct tgaagacaaa caacgtctgt      240
agcgaccctt tgcaggcagc ggaaccccc acctggcgac aggtgcctct gcggccaaaa      300
gccacgtgta taagatacac ctgcaaaggc ggcaacaacc cagtgccacg ttgtgagttg      360
gatagttgtg gaaagagtca aatggctctc ctcaagcgta ttcaacaagg ggctgaagga      420
tgcccagaag gtacccatt gtatgggatc tgatctgggg cctcggtgca catgctttac      480
atgtgttttag tcgaggttaa aaaacgtcta ggccccccga accacgggga cgtggttttc      540
ctttgaaaaa cacgatgata at                                              562

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<210> 6
<211> 156
<212> DNA
<213> Unknown

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<220>
<221> source
<223> /note="Description of Unknown:
      Picobirnavirus sp. sequence"

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<400> 6
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gtttaaccag aagtgttact gaaaggaggt tatttta                                156

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<210> 7
<211> 340
<212> DNA
<213> Unknown

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<220>
<221> source
<223> /note="Description of Unknown:
      Hepatitis C virus sequence"

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<400> 7
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ccccctcccg ggagagccat agtgggtctgc ggaaccggtg agtacaccgg aattgccggg	180
aagactgggt cctttcttgg ataaaccac tctatgcccg gacatttggg cgtgcccccg	240
caagactgct agccgagtag cgttgggttg cgaaaggcct tgtgggtactg cctgataggg	300
tgcttgcgag tgccccggga ggtctcgtag accgtgcatc	340

<210> 8
 <211> 315
 <212> DNA
 <213> Unknown

<220>
 <221> source
 <223> /note="Description of Unknown:
 Human Cosavirus sequence"

<400> 8 ctacaagctt tgtgtaaaca aacttttgtt tggcttttct caagcttctc tcacatcagg	60
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acctgcaaaa ttttgcaaac gcatgtggta tcccagcccc ctctctcgg ggagggggct	180
ttgctcactc agcacaggat ctgatcagga gatccacctc cgggtgcttta caccggggcg	240
tggatttaaa aattgcccga ggcttggcgc acaacctagg ggactagggtt ttccttatat	300
tttaaagctg tcaat	315

<210> 9
 <211> 182
 <212> DNA
 <213> Unknown

<220>
 <221> source
 <223> /note="Description of Unknown:
 Human Cosavirus sequence"

<400> 9 gtcttaggac gacgcatgtg gtatcccagc cccgcctac attggcgggg gcttttgaag	60
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gccaaggtc cgccaccca acctagggga ctaggttttc cttttatatt taaattgtca	180
tt	182

<210> 10
<211> 759
<212> DNA
<213> Unknown

<220>
<221> source
<223> /note="Description of Unknown:
Human Cosavirus sequence"

<400> 10
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gcagtgggtg gagtactgca aagatgtcac cgtgctttac acggtttttg aacccacac 120
cggctgtttg acgctcgtag ggcagcaggt ttattttcat taaaattctt actttctagc 180
tgcattgagtt ctattcatgc agacggagtg atactcccgt tccttcttgg acaggttgcc 240
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cggatttcct ctcgtgggtga cacgagcctc acaggccaaa agccccgtcc gaaaggaccc 420
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ttctgtcata aatctctatc acatcaggcc ccaaagatgt cctgaaggta ccctgtgtat 540
ctgaggatga gcaccaccga ctaccggac ttgcattagc agacacatgt ggttgcccag 600
ccccacctct tcagagggtg ggctttgctc actcagcaca ggatctgatc aggagccccg 660
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aggggactag gttttcctat ttttgtaa at tatgtcaat 759

<210> 11
<211> 478
<212> DNA
<213> Unknown

<220>
<221> source
<223> /note="Description of Unknown:
Human rhinovirus sequence"

<400> 11
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agtagcactt ttgaagccta tggctggtcg ctcaactgtt taccagcag tagacctggc	180
agatgaggct agatgttccc caccagcgat ggtgatctag cctgcgtggc tgcctgcaca	240
ctctattgag tgtgaagcca gaaagtggac aagggtgtgaa gagcctattg tgctcacttt	300
gagtcctccg gcccctgaat gtggctaata ctaaccccgt agctgttgca tgtaatccaa	360
catgtctgca gtcgtaatgg gcaactatgg gatggaacca actactttgg gtgtccgtgt	420
ttcttgtttt tctttatgct tgcttatggt gacaactgta gttattacat ttgttacc	478

<210> 12

<211> 628

<212> DNA

<213> Unknown

<220>

<221> source

<223> /note="Description of Unknown:
Human rhinovirus sequence"

<400> 12

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gtacctttgt acgcctgttt ctcccaacc acccttcctt aaaattcca cccatgaaac	120
gttagaagct tgacattaaa gtacaatagg tggcgccata tccaatgggtg tctatgtaca	180
agcacttctg tttcccagga gcgaggtata ggctgtacct actgcaaaa gcctttaacc	240
gttatccgcc aaccaactac gtaacagtta gtaccatctt gttcttgact ggacgttcga	300
tcaggtggat tttccctcca ctggtttggt cgatgaggct aggaattccc cacgggtgac	360
cgtgtcctag cctgcgtggc ggccaacca gcttatgctg ggacgccctt ttaaggacat	420
ggtgtgaaga ctcgcatgtg cttggttggt agtcctccgg cccctgaatg cggctaacct	480
taaccctaga gccttatgcc acgatccagt ggttgtaagg tcgtaatgag caattccggg	540
acgggaccga ctactttggg tgtccgtgtt tctcattttt cttcatattg tcttatggtc	600
acagcatata tatacatata ctgtgatc	628

<210> 13

<211> 618

<212> DNA

<213> Unknown

<220>

<221> source
 <223> /note="Description of Unknown:
 Human rhinovirus sequence"

<400> 13
 ttaaaactgg gagtgggttg ttccactca ctccacccat gcggtgttgt actctgttat 60
 tacggtaact ttgtacgcca gtttttccca cccttcccca taatgtaact tagaagtttg 120
 tacaatatga ccaataggtg acaatcatcc agactgtcaa aggtcaagca cttctgtttc 180
 cccggtcaat gaggatatgc ttaccacaag gcaaaaacct tagagatcgt tatccccaca 240
 ctgcctacac agagcccagt accatttttg atataattgg gttggtcgct ccctgcaaac 300
 ccagcagtag acctggcaga tgaggctgga cattccccac tggcgacagt ggtccagcct 360
 gcgtggctgc ctgctcacc ttcttgggtg agaagcctaa ttattgacaa ggtgtgaaga 420
 gccgcgtgtg ctgagtggtc ttctccggc ccctgaatgt ggctaaccctt aaccctgcag 480
 ccgttgccca taatccaatg ggtttgcggt cgtaatgcgt aagtgcggga tgggaccaac 540
 tactttgggt gtccgtgttt cctgtttttc ttttgattgc attttatggt gacaatttat 600
 agtgtataga ttgtcatc 618

<210> 14
 <211> 610
 <212> DNA
 <213> Unknown

<220>
 <221> source
 <223> /note="Description of Unknown:
 Human rhinovirus sequence"

<400> 14
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 ctcgaccaac aggcgggtgt aaaccatacc acttacggtc aagcactcct gtttccccgg 180
 tatgcgagga atagactcct acagggttga agcctcaagt atcgttatcc gcattgttac 240
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 gctgcctgcg cacccttagg ggtgcgaagc caagtgcag acaagggtgtg aagagccccg 420
 tgtgctacca atgagtcctc cggcccctga atgcggctaa tccaaccca cagctattgc 480

acacaagcca gtgtgtatgt agtcgtaatg agcaattgtg ggacggaacc gactactttg	540
gggtgtccgtg tttcctttta ttcttatcat tctgcttatg gtgacaatac tgtgaaatag	600
tgttggttacc	610

<210> 15
 <211> 614
 <212> DNA
 <213> Unknown

<220>
 <221> source
 <223> /note="Description of Unknown:
 Human rhinovirus sequence"

<400> 15	
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caatacgacc aataggttgt agttagccaa actaccaaag gtcaagcact tctgtttccc	180
cgggtcaaagt tgatatgctc caacagggca aaaacaactg agatcgttat ccgcaaagtg	240
cctacgcaaa gcctagtaac acctttgaag atttatgggt ggtagttccg ctatttccca	300
tagtagacct ggtagatgag gctagaaatc cccactggc gacagtgtc tagcctgcgt	360
ggctgcctgc gcaccccttg ggtgcgaagc catacattgg acaagggtgtg aagagccccg	420
tgtgtctact ttgagtcctc cggcccctga atgtggctaa ccttaaccct gcagctagt	480
catgtaatcc aacatgttgc tagtcgtaat gagtaattgc gggacgggac caactacttt	540
gggtgtccgt gtttcacttt ttccttttaa tattgcttat ggtgacaata tatatagcta	600
tatatattga cacc	614

<210> 16
 <211> 624
 <212> DNA
 <213> Unknown

<220>
 <221> source
 <223> /note="Description of Unknown:
 Salivirus A sequence"

<400> 16	
ttcccctgca accattacgc ttactcgcat gtgcattgag tggtagcatgt gttgaacaaa	60

cagctacact cacatggggg cgggttttcc cgccttacgg cttctcgga ggcccacccc	120
tcccccttct cccataacta cagtgccttg gtaggtaagc atcctgatcc cccgcggaag	180
ctgctcacgt ggcaactgtg gggaccaga caggttatca aaggcaccg gtctttccgc	240
cttcaggagt atccctgcta gcgaattcta gtagggctct gcttggtgcc aacctcccc	300
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ttggtcagca tatctgagac gatgttccgc tgtcccagac cagtccagta atggacgggc	420
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gttggtgtgc ccaacgcccg tactcagggg atacctcaag gcacccagga atgccaggga	540
ggtacccgcg ttcacagcgg gatctgaccc tggggtaaag gtctgcgggg ggtcttcttg	600
gcccacttct cagtactttt cagg	624

<210> 17
 <211> 730
 <212> DNA
 <213> Unknown

<220>
 <221> source
 <223> /note="Description of Unknown:
 Salivirus FHB sequence"

<400> 17	
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tggcacgtgc gttgtccaaa cagctacacc cacacccttc ggggcggggt tgtcccgccc	180
tcgggttcct cgcggaaccc cccctccct ctctctcttt ctatccgccc tcacttccca	240
taactacagt gctttggtag gtgagcacc tgacccccg cggaagctgc taactggga	300
actgtgggga tccaggcagg ttatcaaagg caccggtct ttccgccttc aggagtatct	360
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tgaggcgacg ttccgctgtc ccagaccagt ccagcaatgg acgggccagt gtgcgtagtc	540
gctttccggt tttccggcgc atgtttggcg aaacgctgag gtaagggttg tgtgcccaac	600
gcccgtattt tggatgatacc tcaagaccac ccaggaatgc caggaggta cccacttcg	660

gtgggatctg accctgggct aattgtctac ggtggttctt cttgcttcca cttctctttt	720
ttctggcatg	730

<210> 18
 <211> 709
 <212> DNA
 <213> Unknown

<220>
 <221> source
 <223> /note="Description of Unknown:
 Salivirus NG-J1 sequence"

<400> 18	
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cctcaccccc aattttccct tttcttcccc tgcaaccatt acgcttactc gcatgtgcat	120
tgagtgggtc atgtgttgaa caaacagcta cactcacatg ggggcgggtt ttcccgcctt	180
acggcctctc gcgaggccca ccccttcctt ccccttataa ctacagtgtt ttggtaggtta	240
agcatcctga tccccgcgg aagctgtctc cgtggcaact gtggggaccc agacaggtta	300
tcaaaggcac ccggtctttc cgccttcagg agtatcccta ctagtgaatt ctagcggggc	360
tctgcttggg gccaacctcc cccaaatgcg cgctgcggga gtgctcttcc ccaactcacc	420
ctagtatcct ctcatgtgtg tgcttgggtc gcatacttga gacgatgttc cgctgtccca	480
gaccagtcca gtaatggacg ggccagtgcg tgtagtcgtc ttccggcttg tccggggcat	540
gtttgggtgaa ccggtggggg aagggtgggt tgcccaacgc ccgtactttg gtgacacctc	600
aagaccaccc aggaatgcca gggaggtacc ccacctcacg gtgggatctg accctgggct	660
aattgtctac ggtggttctt cttgcttcca cttctttctt ctgttcacg	709

<210> 19
 <211> 708
 <212> DNA
 <213> Unknown

<220>
 <221> source
 <223> /note="Description of Unknown:
 Human Parechovirus sequence"

<400> 19	
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tctctaggag agcccttttc ccagccctga ggcggctggc caataaaagc ctcaaacgta	120
actaacacct aagaagatca tgtaaacctt atgcctggc tccactattc gaaggcaact	180
tgcaataaga agagtgggat caagacgctt aaagcataga gacagttttc ttttctaacc	240
cacatttggtg tgggggtggca gatggcgtgc cataactcta atagttagat accacgcttg	300
tggaccttat gctcacacag ccatacctcta gtaagtttgt gagacgtctg gtgacgtgtg	360
ggaacttatt ggaaacaaca ttttgctgca aagcatccta ctgccagcgg aaaaacacct	420
ggtaacaggt gcctctgggg ccaaagcca aggtttaaca gaccctttag gattggttct	480
aaacctgaga tgttggtgaa gatatttagt acctgctgat ctggtagtta tgcaaact	540
agttgtaagg cccatgaagg atgccagaa ggtaccgta ggtaacaagt gacactatgg	600
atctgatttg gggccagata cctctatctt ggtgatctgg ttaaaaaaca tctaattgggc	660
caaaccggg ggggatcccc ggtttcctct tattctatca atgccact	708

<210> 20

<211> 508

<212> DNA

<213> Unknown

<220>

<221> source

<223> /note="Description of Unknown:
Crohivirus B sequence"

<400> 20

gtataagaga caggtgtttg ccttgtcttc ggactggcat cttgggacca accccctttt	60
tccccagcca tgggttaaata ggcaataaag gacgtaacaa ctttgtaacc attagctttt	120
gtaattttgt aaccactaag ctttgtgcac ataattgtaac catcaagctt gttagtccca	180
gcaggaggtt tgcattgctt tagccgaaat ggggctcgac ccccatagt aggatacttg	240
attttgcat ccatgttgga cctgcaaact ctacacatag aggcctttgtc ttgcatctaa	300
acacctgagt acagtgtgta cctagaccct atagtacggg aggaccgttt gtttcctcaa	360
taaccctaca taataggcta ggtgggcatg cccaatttgc aagatcccag actgggggtc	420
ggtctgggca gggttagatc cctgttagct actgcctgat aggggtggc tcaacctgt	480
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<210> 21
 <211> 248
 <212> DNA
 <213> Unknown

<220>
 <221> source
 <223> /note="Description of Unknown:
 Picornaviridae sp. sequence"

<400> 21
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 tacctatctt agtgctagtt gaggtttgaa gtgagccggt ttttagaaga accagtttct 120
 gaacattatc atccccagca tctattctat acgcacaaga tagatagtca tcagcagaca 180
 catctgtgct actgcttgat agagttgcgg ctggtcaact tagattggta taaccagttg 240
 agtggcaa 248

<210> 22
 <211> 516
 <212> DNA
 <213> Unknown

<220>
 <221> source
 <223> /note="Description of Unknown:
 Rosavirus M-7 sequence"

<400> 22
 tatgcatcac tggacggcct aacctcggtc gtggcttctt gccgatttca gcgctaccag 60
 gctttctggt ctcgccaggc gttgattagt aggtgcactg tctaagtga gacagcagtg 120
 ctctctgtga aaagttgatg acactcttca ggtttgtagc gatcactcaa ggctagcgga 180
 tttccccgtg tggtaacaca cgcctctagg cccagaaggc acggtgttga cagcaccct 240
 tgagtggctg gtcttcccca ccagcacctg atttgtggat tcttcctagt aacggacaag 300
 catggctgct ctaagcatt cagtgcgtcc ggggctgaag gatgcccaga aggtaccgc 360
 aggtaacgat aagctcactg tggatctgat ctggggctgc gggctgggtg tctttccacc 420
 cagccaaaac ccgtaaaacg gtagtcgcag ttaaaaaacg tctaggcccc accccccag 480
 ggatgggggg ttcccttaaa ccctcacaag ttcaac 516

<210> 23
 <211> 478

<212> DNA
<213> Unknown

<220>
<221> source
<223> /note="Description of Unknown:
Shanbavirus A sequence"

<400> 23
tgaaaagggg gcgcagggtg gtggtgggta ctaaataccc accatcgccc tgcacttccc 60
ttttcccctg tggctcaggg tcacttagcc ccctctttgg gttaccagta gttttctacc 120
cctgggcaca gggttaacta tgcaagacgg aacaacaatc tcttagtccc cctcgccgat 180
agtgggctcg acccccatgt gtaggagtgg ataaggacg gagtgagccg atacggggaa 240
gagtgtgcgg tcacacctta attccatgag cgctgcgaag aaggaagctg tgaacaatgg 300
cgacctgaac cgtacacatg gagctccaca ggcatggtag tcgttagact acgcagcctg 360
gttgggagtg ggtataccct gggtagagccg ccagtgaatg ggagttcact ggtaaacaca 420
cactgcctga tagggtcagg gcctcctgtc cccgccgtaa tgaggtagac catatgcc 478

<210> 24
<211> 403
<212> DNA
<213> Unknown

<220>
<221> source
<223> /note="Description of Unknown:
Pasivirus A sequence"

<400> 24
gcggctggat attctggccg tgcaactgct tttagaccagt ggctctgggt aacttagcca 60
aagtgtcctt ctccctttcc ctattatatg ttttatggct ttgtctggtc ttgtttagtt 120
tatatataag atcctttccg ccgatataga cctcgacagt ctagttaggagg aggattgggtg 180
atattaattt gccccagaag agtgaccgtg acacatagaa accatgagta catgtgtatc 240
cgtggaggat cggccgggac tggattccat atcccattgc catcccaaca agcggagggt 300
ataccacta tgtgcacgtc tgcagtggga gtctgcagat ttagtcatac tgcctgatag 360
gggtgtggcc tgcactctgg ggtactcagg ctgtttatat aat 403

<210> 25
<211> 404

<212> DNA
<213> Unknown

<220>
<221> source
<223> /note="Description of Unknown:
Pasivirus A sequence"

<400> 25
gctggacttt ctggctgcgc aactgctttt aaccagtggc tctgggttac ttagccaaaa 60
ccccctttcc ccgtacccta gtttgtgtgt gtattattat tttgttggtt ttttgtaaat 120
ttttatataa gatcctttcc gccgatatag acctcgacag tctagtgtag gaggattggt 180
gatattaata tgccccagaa gagtgaccgt gacacataga aaccatgagt acatgtgtat 240
ccgtggagga tcgcccggga ctggattcca tatcccattg ccatcccaac aaacggaggg 300
tatacccgct atgtgcgcgt ctacagtggg aatctgtaga tttagtcata ctgcctgata 360
gggtgtgggc ctgcactctg ggggtactcag gctgtttata taat 404

<210> 26
<211> 744
<212> DNA
<213> Unknown

<220>
<221> source
<223> /note="Description of Unknown:
Echovirus E14 sequence"

<400> 26
ttaaaccagc ctgtgggttg ttcccatcca caggggccac tgggcgccag cactctggta 60
ttgcggtacc ttagtgccgc tgttttatat acccgtcccc caaacgtaac ttagacgcat 120
gtcaacgaag accaatagta agcgcagcac accagctgtg ttccggtcaa gcacttctgt 180
taccgccgac cgagtatcaa taagctactc acgtggctga aggagaaaac gttcgttacc 240
cgaccaatta cttcaagaaa cctagtaaca ccatgaaggt tgcgcagtgt ttcgctccgc 300
acaaccccag ttagatcag gtcgatgagt caccgcattc cccacgggtg accgtggcgg 360
tggctgcgct ggccgcctgc ccatggggaa acccatggga cgcttcaata ctgacatggt 420
gcgaagagtc tattgagcta attggtagtc ctccggcccc tgaatgcggc taatcctaac 480
tgcggagcag ataccacac accagtgggc agtctgtcgt aacgggcaac tctgcagcgg 540
aaccgactac tttgggtgtc cgtgtttctc tttatcctta tactggctgc ttatggtgac 600

aattgagaga ttgttaccat atagctattg gattggccat ccggtgacaa atagagcaat	660
tgtgtatttg tttgttggtt tcgtgccatt aaattacaag gttctaaaca cccttaatct	720
tattatagca ttcaacacaa caaa	744

<210> 27
 <211> 663
 <212> DNA
 <213> Unknown

<220>
 <221> source
 <223> /note="Description of Unknown:
 Human Parechovirus sequence"

<400> 27	
gtacattaga tgcgtcatct gcaactttag tcaataaatt acctccaatg tcattaccaa	60
cattccctac cttttcacta acacctaaga caacaagtac ctatgcctgg tctccactat	120
tcgaaggcaa cttgcaataa gaagagtgga attaagacgc ttaaagcata gagctagtta	180
tcttttctaa cccacaaagt tttgtggggg ggcagatggc gtgccataac tctattagt	240
agataccatg cttgtggatc ttatgctcac acagccatcc tctagtaagt tgataagg	300
tctggtgata tgtgggaact cacatgaacc attaatttac cgtaagggtat cctatagcca	360
gcggaatcac atctggtgac agatgcctct ggggccgaaa gccaagggtt aacagacc	420
ataggattgg tttcaaaacc tgaattgatg tggattgtgt atagtacctg ttgatctg	480
aacagtgtca aactagtgtg taaggccac gaaggatgcc cagaaggtag ccgtaggt	540
caagtgcac tatggatctg atctggggcc agctacctct atcatggtga gttggttaa	600
aaacgtctag tgggccaaac ccagggggga tccctggttt ccttttacct aatcaaag	660
act	663

<210> 28
 <211> 744
 <212> DNA
 <213> Unknown

<220>
 <221> source
 <223> /note="Description of Unknown:
 Aichi virus sequence"

<400> 28
 ttgaaaagg gggtaggggg gcctcggccc cctcacctc tttccgggtg gtctgggtccc 60
 ggaccaccgt tactccattc agcttcttcg gaacctgttc ggaggaatta aacgggcacc 120
 catactcccc ccacccccct tttgtaacta agtatgtgtg ctcgtgatct tgactccac 180
 ggaacggacc gatccgttgg tgaacaaaca gctaggtcca catcctccct tcccctggga 240
 gggccccgc cctcccatat cctcccccca gcctgacgta tcacaggctg tgtgaagccc 300
 ccgcgaaagc tgctcacgtg gcaattgtgg gtccccctt catcaagaca ccaggctttt 360
 cctccttaag gctagccccg gcgtgtgaat tcacgttggg caactagtgg tgtcactgtg 420
 cgctcccaat ctcggccgcg gagtgctgtt cccaagcca aaccctggc ctttactat 480
 gtgcctggca agcatatctg agaagggtgtt ccgctgtggc tgccaacctg gtgacagggtg 540
 cccagtggtg cgtaaccttc ttccgtctcc ggacggtagt gattgggtta gatttggtgt 600
 aaggttcatg tgccaacgcc ctgtgcggga tgaaacctct actgccctag gaatgccagg 660
 caggtagccc acctccgggt gggatctgag cctgggctaa ttgtctacgg gtagtttcat 720
 ttccaatcct tttatgtcgg agtc 744

<210> 29
 <211> 734
 <212> DNA
 <213> Unknown

<220>
 <221> source
 <223> /note="Description of Unknown:
 Hepatitis A virus sequence"

<400> 29
 ttcaagaggg gtctccggag tttccggaa cccctcttgg aagtccatgg tgaggggact 60
 tgataacctca ccgccgtttg cctaggctat aggctaaatt tccctttccc tgtccttccc 120
 ctatttcctt ttgttttgtt tgtaaataatt aattcctgca gggtcagggt tctttaatct 180
 gtttctctat aagaacactc aatttttcac gctttctgtc tcctttcttc cagggtcttc 240
 cccttgccct aggctctggc cgttgcgcc ggccgggtca actccatgat tagcatggag 300
 ctgtaggagt ctaaattggg gacgcagatg tttgggacgt cgcttgcag tgttaacttg 360
 gctttcatga acctctttga tcttcacaa ggggtaggct acgggtgaaa cctcttaggc 420
 taatacttca atgaagagat gccttgata gggtaacagc ggccgatatt ggtgagttgt 480

taagacaaaa accattcaac gccggaggac tggctctcat ccagtggatg cattgaggga	540
attgattgtc agggctgtct ctaggtttaa tctcagacct ctctgtgctt agggcaaaca	600
ctatttggcc ttaaattggga tcctgtgaga gggggtcct ccattgacag ctggactgtt	660
ctttggggcc ttatgtggtg tttgcctctg aggtactcag gggcatttag gtttttcctc	720
attcttaaata aata	734

<210> 30
 <211> 638
 <212> DNA
 <213> Unknown

<220>
 <221> source
 <223> /note="Description of Unknown:
 Phopivirus sequence"

<400> 30	
gggagtaaac ctcaccaccg tttgccgtgg tttacggcta cctatTTTTg gatgtaaata	60
ttaattcctg caggttcagg tctcttgaat tatgtccacg ctagtggcac tctcttacc	120
ataagtgacg ccttagcgga accttctac acttgatgtg gttaggggtt acattatttc	180
cctgggcctt ctttggccct ttttccctg cactatcatt ctttcttcg ggctctcagc	240
atgccaatgt tccgaccggt gcgcccgcg gggttaactc catggttagc atggagctgt	300
aggccctaaa agtgctgaca ctggaactgg actattgaag catacactgt taactgaaac	360
atgtaactcc aatcgatctt ctacaagggg taggctacgg gtgaaacccc ttaggttaat	420
actcatattg agagatactt ctgatagggt aaggttgctg gataatggtg agtttaacga	480
caaaaacat tcaacagctg tgggccaacc tcatcaggta gatgcttttg gagccaagt	540
cgtaggggtg tgtgtggaaa tgcttcagt gaaggtgcc tccgaaagg tcgtaggggt	600
aatcaggggc agttaggttt ccacaattac aatttgaa	638

<210> 31
 <211> 743
 <212> DNA
 <213> Unknown

<220>
 <221> source
 <223> /note="Description of Unknown:

CVA10 sequence"

```
<400> 31
gctcttccga tctgggttgt tcccaccac agggccact gggcgccagc actctgattc      60
cacggaatct ttgtgcgcct gttttacaac ctttccaat ttgtaacgta gaagcaatac      120
aactactga tcaatagtag gcatggcgcg ccagtcattg catgatcaag cacttctgtt      180
ccccggact gagtatcaat agactgctca cgcggttgaa ggagaaaacg ttcgttacct      240
ggctaactac ttcgagaaac ctagtagcac catggaagct gcggagtgtt tcgctcagca      300
ctttccccgt gtagatcagg tcgatgagtc actgcaatcc ccacgggcga ccgtggcagt      360
ggctgcgttg gcggcctgcc tatggggcaa cccataggac gctctaattg ggacatgggtg      420
cgaagagtct attgagctag ttagtagtcc tccggcccct gaatgcggct aatcctaact      480
gcggagcaca tgccttcaac ccaggagggtg gtgtgtcgta acgggtaact ctgcagcgga      540
accgactact ttgggtgtcc gtgtttcctt ttatccttat attggctgct tatggtgaca      600
atcacggaat tgttgccata tagctattgg attggccatc cgggtgtctaa cagagctatt      660
gtatacctat ttgttggtatt tactccccta tcatacaaact ctctgaacac tttgtgcttt      720
atactgaact taaacacacg aaa                                              743
```

```
<210> 32
<211> 746
<212> DNA
<213> Unknown
```

```
<220>
<221> source
<223> /note="Description of Unknown:
Enterovirus C sequence"
```

```
<400> 32
ttaaaacagc tctgggggttg ttcccacccc agaggccac gtggcggcca gtacaccggt      60
accacggtac ccttgtagcg ctgttttata ctcccctccc cgtaaactag aagcacgaaa      120
cacaagttca atagaagggg gtacagacca gtaccaccac gaacaagcac ttctgttccc      180
ccggtgaggt cacatagact gtccccacgg tcaaaagtga ctgatccgtt atccgctcac      240
gtacttcgga aagcctagta ccaccttga atctacgatg cgttgcgctc agcactcgac      300
cccggagtgt agcttaggct gatgagtctg gacgttcccc actggtgaca gtggtccagg      360
ctgcgttggc ggccctacct tgggtcaaaa ccacaggacg ctagtagtga acaagggtgtg      420
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aagagccac tgagctacct gagaatcctc cggcccctga atgcggctaa tccaaccac	480
ggagcaggta atcgcaaacc agcggtcagc ctgtcgtaac gcgtaagtct gtggcggaac	540
cgactacttt ggggtgtccgt gtttcctttt atttttatgg tggctgctta tggtgacaat	600
catagattgt tatcataaag caaattggat tggccatccg gagtgagcta aactatctat	660
ttctctgagt gttggattcg tttcaccac attctgaaca atcagcctca ttagtgttac	720
cctgttaata agacgatatc atcacg	746

<210> 33

<211> 726

<212> DNA

<213> Unknown

<220>

<221> source

<223> /note="Description of Unknown:
Enterovirus D sequence"

<400> 33

ttaaaacagc tctggggttg ttcccacccc agaggccac gtggcggcta gtactccggt	60
accccggtag ccttgtagc ctgttttata ctccctttcc caagtaactt tagaagaaat	120
aaactaatgt tcaacaggag ggggtacaaa ccagtaccac cacgaacaca cacttctgtt	180
tccccggtag agttgcatag actgtacca cggttgaaag cgatgaatcc gttaccgct	240
taggtacttc gagaagccta gtatcatctt ggaatcttcg atgcgttgcg atcagcactc	300
taccccgagt gtagcttggg tcgatgagtc tggacacccc acaccggcga cgtggtccag	360
gctgcgttgg cggcctaccc atggctagca ccatgggacg ctagttgtga acaagggtgcg	420
aagagcctat tgagctacct gagagtcctc cggcccctga atgcggctaa tccaaccac	480
ggagcaaag ctcacaatcc agtgagtggg ttgtcgtaat gcgcaagtct gtggcggaac	540
cgactacttt ggggtgtccgt gtttcctttt atttttatta tggctgctta tggtgacaat	600
ctgagattgt tatcatatag ctattggatt agccatccgg tgatatcttg aaattttgcc	660
ataacttttt cacaaatcct acaacattac actacacttt ctcttgaata attgagacaa	720
ctcata	726

<210> 34

<211> 737

<212> DNA
<213> Unknown

<220>
<221> source
<223> /note="Description of Unknown:
Enterovirus J sequence"

<400> 34
ttaaaatagc ctcagggttg ttcccaccct gagggcccac gtggtgtagt actctggtat 60
tacggtacct ttgtacgcct attttatacc cccttcccca agtaatttag aagcaagcac 120
aaaccagttc agtagtaagc agtacaatcc agtactgtaa tgaacaagta cttctgttac 180
cccggaaggg tctatcggtg agctgtaccc acggctgaag aatgacctac cgtaaccgg 240
ctacctactt cgagaagcct agtaatgccg ttgaagtttt attgacgtta cgctcagcac 300
actaccccggt gtgtagtttt ggctgatgag tcacggcact cccacgggc gaccgtggcc 360
gtggctgcgt tggcgcccaa ccaaggagtgc caagctcctt ggacgtcata ttacagacat 420
gggtgtgaaga gcctattgag ctaggtggta gtcctccggc ccctgaatgc ggctaactct 480
aactccggag catatcggtg cgaaccagca cttgggtgtgt tgtaatacgt aagtctggag 540
cggaaccgac tactttgggt gtccgtgttt cctgttttaa cttttatggc tgcttatggt 600
gacaatttaa cattgttacc atatagctgt tgggttggcc atccggattt tgttataaaa 660
ccatttcctc gtgccttgac cttaacaca tttgtgaact tctttaaatc cttttatta 720
gtccttaaat actaaga 737

<210> 35
<211> 327
<212> DNA
<213> Pegivirus sp.

<400> 35
aactgttggt gtagcaatgc gcatattgct acttcggtac gcctaattgg taggcgcccg 60
gccgaccggc cccgcaaggg cctagtagga cgtgtgacaa tgccatgagg gatcatgaca 120
ctggggtgag cggaggcagc accgaagtcg ggtgaactcg actcccagtg cgaccactg 180
gcttggtcgt tcatggaggg catgcccacg ggaacgctga tcgtgcaaag ggatgggtcc 240
ctgcactggt gccatgcgcg gcaccactcc gtacagcctg atagggtggc ggcgggcccc 300
cccagtgtga cgtccgtgga gcgcaac 327

<210> 36
<211> 281
<212> DNA
<213> Unknown

<220>
<221> source
<223> /note="Description of Unknown:
GB virus C sequence"

<400> 36
tgacgtgggg gggttgattt tcccccccg gcactgggtg caagccccag aaaccgacgc 60
ctatctaagt agacgcaatg actcggcgcc gactcggcga ccggccaaaa ggtggtggat 120
gggtgatgac agggttggta ggtcgtaaat cccggtcatc ctggtagcca ctataggtgg 180
gtcttaagag aaggtcaaga ttcctcttac gcctgcggcg agaccgcgca cgggccacag 240
gtgttgcccc taccggtgtg aataagggcc cgacatcagg c 281

<210> 37
<211> 459
<212> DNA
<213> Unknown

<220>
<221> source
<223> /note="Description of Unknown:
GB virus C sequence"

<400> 37
gacgtggggg ggttgatccc cccccttgg cactgggtgc aagccccaga aaccgacgcc 60
tatttaaaca gacgttaaga accggcgccg acccggcgac cggccaaaag gtggtggatg 120
ggtgatgcca gggttggtag gtcgtaaatc ccggtcatct tggtagccac tataggtggg 180
tcttaagggt tggtaagggt ccctctggcg cttgtggcga gaaagcgac ggtccacagg 240
tgttggccct accggtgtga ataagggcc gacgtcaggc tcgtcgtaa accgagccca 300
ctaccacct gggcaaaaa cgccacgta cgggtccacgt cgcccttcaa tgtctctctt 360
gaccaatagg cttagccggc gagttgacaa ggaccagtgg gggctgggcg gtaggggaag 420
gaccctgcc gctgcccttc ccggtggagt gggaaatgc 459

<210> 38
<211> 350
<212> DNA

<213> Unknown

<220>

<221> source

<223> /note="Description of Unknown:
GB virus C sequence"

<400> 38

tgacgtgggg gggttgatcc gcccccccg gcactcgggtg caagcccat aaaccgacgc	60
ctatctaagt agacgcaatg actcggcgcc gactcggcga ccggccaaaa ggtggtggat	120
gggtggtgac agggttggta ggtcgtaaat cccggtcatac ctggtagcca ctataggtgg	180
gtcttaagag aaggtcaaga ctctcttgt gcctcggcg agaccgcgca cggtccacag	240
gtgctggccc taccggtgtg aataagggcc cgacgtcagg ctgctgtta aaccgagccc	300
gtcaccacc tgggcaaacg acgcccacgt acggtccacg tcgcccttca	350

<210> 39

<211> 318

<212> DNA

<213> Pegivirus A

<400> 39

tgtagcaatg gcgatattgc tacttcggta gcctaattg gtaggcgccc ggccgaccgg	60
ccccgcaagg gcctagtagg acgtgtgaca atgcatgcg ggatcatgac actgggggtga	120
gcggaggcag caccgaagtc ggggtgaactc gactcccagt gcgaccacct ggcttggtcg	180
ttcatggagg gcatgcccac gggaacgctg atcgtgcaaa gggatgggtc cctgcactgg	240
tgccatgcgc ggcaccactc cgtacagcct gatagggtgg cggcgggccc cccagtggtg	300
acgtccgtgg agcgcaac	318

<210> 40

<211> 399

<212> DNA

<213> Unknown

<220>

<221> source

<223> /note="Description of Unknown:
Pasivirus A sequence"

<400> 40

atcttctggc cgtgtagctg cttttgacca gtggctctgg gttacttagc caaatcccc	60
ttccttcacc cttttaaatt tgatggtctg tgttgtttgt tttgtcttgt ctaaataata	120

tataagatcc ttccccccga tacagacctc gacagtctgg ttagaggagg ttggtgttat	180
taatttgccc cagaagagtg accgtgacac atagaaacca tgagtacatg tgtatccgtg	240
gaggatcgcc cgggactgga ttccatatcc cattgccatc ccaacaagcg gagggatac	300
ccactatgtg cgcgtttgca gtgggaatct gcaaatttag tcatactgcc tgatagggtg	360
tgggcctgca ctctggggta ctcaggctgt tcatataat	399

<210> 41
 <211> 430
 <212> DNA
 <213> Sapelovirus sp.

<400> 41	
cccctccacc cttaaggtgg ttgtatccca cataccccac cctcccttcc aaagtggacg	60
gacaactgga ttttgactaa cggcaagtct gaatggtatg atttggatac gtttaaacgg	120
cagtagcgtg gcgagctatg gaaaaatcgc aattgtcgat agccatgtta gtgacgcgct	180
tcggcgtgct cctttggtga ttcggcgact ggttacagga gagtaggcag tgagctatgg	240
gcaaacctct acagtattac ttagaggga tgtgcaattg agacttgacg agcgtctctt	300
tgagatgtgg cgcagtctct tggcattacc atagttagct tccaggttgg gaaacctgga	360
ctgggcctat actacctgat agggtcgcgg ctggccgcct gtaactagta tagtcagttg	420
aaaccccccc	430

<210> 42
 <211> 504
 <212> DNA
 <213> Rosavirus B

<400> 42	
gtctcttttag tgtctatgct tcagagagcg gtgaactgac accgttgctt cttgcacagc	60
ccttcgtgcc ggtctttccg gttctcgaca gcgttgggca tcatggctag ttaggctaag	120
atagtggatg atctagtga cagttttgga ttgtttggag tttttagtag atgctagtag	180
tgtgtgtgga cctccccacg tggtaacacg tgccccacag gccaaaagcc aaggtgttga	240
aagcaccctt actagtccca gactaccca tctgggaact cctctcatga aaaatcttag	300
taacttttga ttcggctatt catcaacctc tctagtcaag ggctgaagga tgcccgaag	360
gtaccgcgag gtaacgataa gctcactgtg gatctgatcc ggggcttttg tgcgaccgtc	420

tgtccggcgt agccagagtt aaaaaacgtc taggcccttc caccccaagg gattgggggtt	480
tccccaatca tttgaaagtt cact	504

<210> 43
 <211> 532
 <212> DNA
 <213> Unknown

<220>
 <221> source
 <223> /note="Description of Unknown:
 Bakunsa virus sequence"

<400> 43	
ttttgaacgc cacctcggag cgatatccgg ggaccccctc ccctttttcc ttcctacctt	60
cttcccaaatt ttccctcttc ccttggttatt ttggtttgga tttcctggac atgactcgga	120
cggatctatc tcatttgctt tgtgtctgct ccaccagtgg catggtcgaa agatcatcaa	180
cactggacgt gtactgtaat ggccaaacgt gccacacagg gaaaccatgc cggtcgctgt	240
agcggcggggt ggacgtgggtg gacccctctc cctgctcata aactttgggt aggtgaaggg	300
ttcaagcgac gcttgccgtg agggcgcatc cggatgggtg gaaccaacaa actaggctgt	360
aatggccgac ctgaggtgga tgagctaggg ctgctgcacc aaaagggact cgattcgata	420
tcccggcctg gtagcctagt gcagtgaggact cgtagttggg aatctacgac tggcctagta	480
cagggtgata gccccgtttc ccacgccac ctgttgtagg gacaccccc cc	532

<210> 44
 <211> 494
 <212> DNA
 <213> Tremovirus A

<400> 44	
tttgaaagag gcctccggag tgtccggagg ctctctttcg acccaaccca tactgggggg	60
tgtgtgggac cgtacctgga gtgcacggta tatatgcatt cccgcatggc aagggcgtgc	120
taccttgccc cttgacgcat ggtatgcgtc atcatttgcc ttggtaagc cccatagaaa	180
cgaggcgta cgtgccgaaa atccctttgc gtttcacaga accatcctaa ccatgggtgt	240
agtatgggaa tcgtgtatgg ggatgattag gatctctcgt agagggatag gtgtgccatt	300
caaatccagg gagtactctg gctctgacat tgggacattt gatgtaaccg gacctggttc	360

agtatccggg ttgtcctgta ttgttacggg gtatccgtct tggcacactg aaagggatt	420
tttgggtaat cctttcctac tgcctgatag ggtggcgtgc ccggccacga gagattaagg	480
gtagcaattt aaac	494

<210> 45
 <211> 378
 <212> DNA
 <213> Unknown

<220>
 <221> source
 <223> /note="Description of Unknown:
 Swine Pasivirus 1 sequence"

<400> 45	
gcttttgacc agtggctctg gggtacttag ccaagtcctt ttctcttatt ttcactagtt	60
tatgttgtgt gttgtctgtt ttgttttgtt taaattgtat acaagatcct tcccgccgac	120
acagacctcg acagtctggg gtaggagggt tggatgatatt aatttgcccc aaaagagtga	180
ccgtgatacg tggaaacat gagtacatgt gtatccgtgg aggatcgccc gggactggat	240
tccatatccc attgccatcc caacaaacgg aggggtatacc caccacgtgc gcgtttgcag	300
tgggaatctg caaathtagt catactgcct gatagggtgt gggcctgcac tttggggtag	360
tcaggctgtt catataat	378

<210> 46
 <211> 319
 <212> DNA
 <213> Unknown

<220>
 <221> source
 <223> /note="Description of Unknown:
 Parechovirus-like virus PLV-CHN sequence"

<400> 46	
acatggggta tgttgtctgt cctgttttgt tgaacaata tataagatcc tttccgccga	60
tatagacctc gacagtctag tgtaggagga ttggatgatag taacttgccc cagaagagt	120
accgtgacac atagaaacca tgagtacatg tgtatccgtg gaggatcgcc cgggactgga	180
ttccatatcc cattgccatc ccaacaaacg gaggggtatac ccactatgtg cgcgtttgca	240
gtgggagcct gcaaatttag tcatactgcc tgatagggtg tgggcctgca ctctggggta	300

ctcaggctgt ttatataat 319

<210> 47
 <211> 420
 <212> DNA
 <213> Unknown

<220>
 <221> source
 <223> /note="Description of Unknown:
 Pasivirus A sequence"

<400> 47
 tgaaaaagtg gttgtgcagc tggattttcc ggctgtgcaa ctgcttttga ccagtggctc 60
 tgggttactt agccaaattc ctttccctta tccctattgg tttgtgttgt gtgttgtttg 120
 ttttgttttg tcttaactat atacaagatc cttcccgcg atacagacct cgacagtctg 180
 gtgtaggagg gttggtgtta ttaatttgcc caaaagagt gaccgtgaca cgtggaaacc 240
 atgagtacat gtgtatccgt ggaggatcgc ccgggactgg attccatata ccattgccat 300
 cccaacaaac ggagggtata cccaccacgt gcgcgtttgc agtgggaatc tgcaaattta 360
 gtcatactgc ctgatagggt gtgggcctgc actttgggggt actcaggctg tttatataat 420

<210> 48
 <211> 373
 <212> DNA
 <213> Sicinivirus sp.

<400> 48
 gtgtcattaa ggtgtgtttg gaagttcgaa ttagctgggt tgtggtgatt agtagacccc 60
 ctggaggtac ccaattcgga tctgaccagg gaccctgac tataccgctc cggtaatcgc 120
 ggtttaaaac aatgaacgtc accacacaat tacttttctc attttatttt catcattgtc 180
 ttcctattta ccgattacac tcgatttcct tggatgttcc tggagatttc cctggttacc 240
 tggaccctca ttattgttgt tgtttcacc agcgagctgt cccaattgct tattatttgc 300
 gcttacaact tcgtccta atttttctgg ttgatcgggt tgattgagct cccgggctat 360
 cctgccattc aac 373

<210> 49
 <211> 280
 <212> DNA
 <213> Hepacivirus K

<400> 49
 gggaacaatg gtccgtccgc ggaacgactc tagccatgag tctagtagca gtgcgtgcca 60
 cccattagca caaaaaccac tgactgagcc acaccctcc cggaatcctg agtacaggac 120
 attcgctcgg acgacgcatg agcctccatg ccgagaaaat tgggtatacc cacgggtaag 180
 ggggtggccac ccagcgggaa tctgggggct ggtcactgac tatggtacag cctgataggg 240
 tgctgccgca gcgtcagtgg tatgcggctg ttcattggaac 280

<210> 50
 <211> 384
 <212> DNA
 <213> Hepacivirus A

<400> 50
 acctccgtgc taggcacggt gcgttgtcag cgttttgcgc ttgcatgcgc tacacgcgtc 60
 gtccaacgcg gaggggaactt cacatcacca tgtgtcactc cccctatgga gggttccacc 120
 ccgcttacac ggaaatgggt taaccatacc caaagtacgg gtatgcgggt cctcctaggg 180
 cccccccggc aggtcgaggg agctggaatt cgtgaattcg tgagtacacg aaaatcgcgg 240
 cttgaacgtc tttgaccttc ggagccgaaa tttgggcgtg cccacgaag gaaggcgggg 300
 gcggtgttgg gccgccgcc cctttatccc acggtctgat aggatgcttg cgagggcacc 360
 tgccggtctc gtagaccata ggac 384

<210> 51
 <211> 384
 <212> DNA
 <213> Unknown

<220>
 <221> source
 <223> /note="Description of Unknown:
 Bovine viral diarrhea virus 1 sequence"

<400> 51
 gtatacgaga atttgcttag gacctggtt acaatatggg caatctaaaa ttataattag 60
 gcctaaggga caaatcctcc tcagcgaagg ccgaaaagag gctagccatg cccttagtag 120
 gactagcaaa ataagggggg tagcaacagt ggtgagttcg ttggatggct gaagccctga 180
 gtacagggta gtcgtcagt gttcgacgct tcggaggaca agcctcgaga taccacgtgg 240
 acgagggcac gccacagca catcttaacc tggacggggg tcgttcaggt gaaaacggtt 300

taaccaaccg ctacgaatac agcctgatag ggtgctgcag aggccactg tattgctact	360
gaaaatctct gctgtacatg gcac	384

<210> 52
 <211> 372
 <212> DNA
 <213> Unknown

<220>
 <221> source
 <223> /note="Description of Unknown:
 Border Disease virus sequence"

<400> 52	
gtatacggga gtagctcatg cccgtataca aaattggata ttccaaaact cgattggggtt	60
aggagagccct cctagcgacg gccgaaccgt gttaaccata cacgtagtag gactagcaga	120
cgggaggact agccatcgtg gtgagatccc tgagcagtct aaatcctgag tacaggatag	180
tcgtcagtag ttcaacgcag gcacggttct gccttgagat gctacgtgga cgagggcatg	240
cccaagactt gctttaatct cggcgggggt cgccgagggtg aaaacaccta acggtgttgg	300
ggttacagcc tgatagggtg ctgcagaggc ccacgaatag gctagtataa aaatctctgc	360
tgtacatggc ac	372

<210> 53
 <211> 388
 <212> DNA
 <213> Unknown

<220>
 <221> source
 <223> /note="Description of Unknown:
 Bovine viral diarrhea virus 2 sequence"

<400> 53	
gtatacgaga ttagctaaag tactcgtata tggattggac gtcaacaaat ttttaattgg	60
caacgtaggg aaccttcccc tcagcgaagg ccgaaaagag gctagccatg ccctttagta	120
ggactagcaa aagtaggggg actagcggtg gcagtgagtt cgttggtgga ccgaaccctt	180
gagtacaggg gagtcgtcaa tggttcgaca ctccattagt cgaggagtct cgagatgcca	240
tgtggacgag ggcatgcccc cggcacatct taacccatgc gggggttgca tgggtgaaag	300
cgctaatacgt ggcgttatgg acacagcctg atagggtgta gcagagacct gctattccgc	360

tagtaaaaaa ctctgctgta catggcac 388

<210> 54
<211> 373
<212> DNA
<213> Unknown

<220>
<221> source
<223> /note="Description of Unknown:
Classical swine fever virus sequence"

<400> 54
gtatacgagg ttagttcatt ctcgtatgca ttattggaca aatcaaaatt tcaatttgggt 60
tcagggcctc cctccagcga cggccgaact gggctagcca tgcccatagt aggactagca 120
aacggagggga ctagccgtag tggcgagctc cctgggtgtt ctaagtcctg agtacaggac 180
agtcgtcagt agttcgacgt gagcagaagc ccacctcgag atgctatgtg gacgagggca 240
tgcccaagac gcaccttaac cctagcgggg gtcgctaggg tgaaatcaca ccacgtgatg 300
ggagtccgac ctgatagggt gctgcagagg ctactatta ggctagtata aaaatctctg 360
ctgtacatgg cac 373

<210> 55
<211> 191
<212> DNA
<213> Unknown

<220>
<221> source
<223> /note="Description of Unknown:
Human blood-associated dicistrovirus sequence"

<400> 55
aaaaccgacc ccagagatca gaaagtcgtt gacgcgatct ttatttagag gacgttgcgc 60
tggcgcgagc tttaattagc agacgcaaaa aataaacaac aaaatgctga tcgcgagact 120
taattgtcag acgattggcc aaatccgatg tgatctttgc tgctcccaga ttgccgaaat 180
aggagtagta g 191

<210> 56
<211> 438
<212> DNA
<213> Unknown

<220>
 <221> source
 <223> /note="Description of Unknown:
 Hubei Picorna-like virus sequence"

<400> 56
 ccccaaaacc ccccccttaa actcaacact gtagtggatt cattttccgt tgcaaaacaa 60
 aacattacta cccgcattta tgtaggctct gtgttttcta tgcgaccgtt acattaatct 120
 ctactctgac ccactagttt ataaaaccga agacctgaat gaaacgattt tccttctttt 180
 caacctctaa cgaacctctg acggccttgag aaacctgaag ttagtaatta tgtttaaaag 240
 aaaggaaagt caaacgcgat gactcttaca tccctattcc ataccgttgc tccacaatgt 300
 gagcgatgcg aggtcgggac tgcagtatta ggggaacgag ctacatggag agttaattat 360
 ctctcccctc ctacgggagt ctcatgtgag ctgtagaaag cggttggcac ctctcggtac 420
 ctgcctgta catgatcc 438

<210> 57
 <211> 193
 <212> DNA
 <213> Cricket paralysis virus

<400> 57
 aaaagcaaaa atgtgatctt gcttgtaa atacaattttga gaggttaata aattacaagt 60
 agtgctatct ttgtatttag gtttagctatt tagctttacg ttccaggatg cctagtggca 120
 gccccacaat atccaggaag ccctctctgc gggtttttcag attaggtagt cgaaaaacct 180
 aagaaattta cct 193

<210> 58
 <211> 752
 <212> DNA
 <213> Unknown

<220>
 <221> source
 <223> /note="Description of Unknown:
 Salivirus A sequence"

<400> 58
 tttcctcctt tcgaccgcct tacggcaggc gggctccgcg acggcttcgg cctaccgcg 60
 acaagaatgc cgtcatctgt ccttatcacc catattcttt cccttcccc gcaaccatca 120

cgcttactcg cgcacgtgtt gaggggcacg tgcgttgtcc aaacagttac actcacaccc	180
ttggggcggg tttgtcccg cctcgggttc ctcgcggaac cctccctctt ctctctccct	240
ttctatccgc cttcactttc cataactaca gtgcttttgt aggtaagcat cctgaccccc	300
cgcggaagct gccaacgtgg caactgtggg gatccaggca ggttatcaaa ggcacccggt	360
ctttccgcct tcaggagtat ccctgccggt gaattccgac agggctctgc ttggtgccaa	420
cctcccccaa atgcgcgctg cgggagtgtt cttccccaac tcatcttagt aaccttcat	480
gtgtgtgctt ggtagcagata tctgaggcga cgttccgctg tcccagacca gtccagcaat	540
ggacgggcca gtgtgcgtag tcgctttccg gtttcccggc gcatgtttgg cgaaacgtg	600
aggtaagggtt ggtgtgcccc atgcccgtaa tttggtgaca cctcaagacc acccaggaat	660
gccagggagg taccacactt cgggtgggac tgaccctggg ctaattgtct acggtggttc	720
ttcttgcttc cacttctctt ttttctggca tg	752

<210> 59

<211> 708

<212> DNA

<213> Unknown

<220>

<221> source

<223> /note="Description of Unknown:
Salivirus A sequence"

<400> 59

tatggcaggc gggcttgttg acggcttcgg cccaccaca gcaagaatgc catcatctgt	60
cctcaccccc atgtttcccc tttctttccc tgcaaccgtt acgcttactc gcaggtgcat	120
ttgagtgggt cacgtgttga ataaacagct acactcacat gggggcgggt tttccgccc	180
tgcggcctct cgcgaggccc accctcccc ttctcccat aactacagtg ctttgtagg	240
taagcatcct gatccccgc ggaagctgct cacgtggcaa ctgtggggac ccagacaggt	300
tatcaaaggc acccgtctt tccgccttca ggagtatccc tgctagtga ttctagtagg	360
gctctgcttg gtgccaacct ccccaaatg cgcgctgcgg gaggctctt ccccaactca	420
ccctagtatc ctctcatgtg tgtgcttggt cagcatatct gagacgatgt tccgctgtcc	480
cagaccagtc cagtaatgga cgggccagtg tgcgtagtcg tcttccggct tttccggcgc	540
atgtttggtg aaccggtggg gtaagggttg tgtgccaac gccgtactt tggtgatacc	600

tcaagaccac ccaggaatgc cagggaggta ccccgttca cagcgggatc tgaccctggg	660
ctaattgtct acggtggttc ttcttgcttc catttctttc tactgttc	708

<210> 60
 <211> 718
 <212> DNA
 <213> Unknown

<220>
 <221> source
 <223> /note="Description of Unknown:
 Salivirus A sequence"

<400> 60	
tttcgaccgc cttatggcag gcgggcttgt ggacggcttc ggcccacca cagcaagaat	60
gccatcatct gtcctcacc ccatttctcc cctccttccc ctgcaaccat tacgcttact	120
cgcattgtga ttgagtgggt cacgtgttga acaaacagct acactcacgt gggggcgggt	180
tttccgccc ttcgccctct cgcgaggccc acccttcccc ttctcccat aactacagt	240
ctttggtagg taagcatcct gatccccgc ggaagctgct cgcgtggcaa ctgtggggac	300
ccagacaggt tatcaaagg acccggtctt tccgcctcca ggagtatccc tgctagttaa	360
ttctagtggg gctctgcttg gtgccaacct ccccaaagt cgcgtgcgg gaggctctt	420
ccccaactca ccctagtatc ctctcatgtg tgtgcttggt cagcatatct gagacgatgt	480
tccgctgtcc cagaccagtc cagcaatgga cgggccagtg tgcgtagtcg tcttcgggt	540
tgtccggcgc atgtttggtg aaccggtggg gtaagggttg tgtgccaac gccgtactt	600
tggtgacaac tcaagaccac ccaggaatgc cagggaggta cccgcctca cggcgggatc	660
tgaccctggg ctaattgtct acggtggttc ttcttgcttc catttctttc ttctgttc	718

<210> 61
 <211> 699
 <212> DNA
 <213> Unknown

<220>
 <221> source
 <223> /note="Description of Unknown:
 Salivirus A sequence"

<400> 61	
tatggcaggc gggcttgttg acggtttcgg cccaccaca gcaagaatgc catcatctgt	60

cctcaccccc aattttccct ttcttcccct gcaatcatca cgcttactcg catgtgcatt	120
gagtgggtgca tgtgttgaac aaacagctac actcacatgg gggcgggttt tcccgcccta	180
cggcctctcg cgaggccac ctttcccctc cccttataac tacagtgcct tggcaggtaa	240
gcatacctgat cccccgcgga agctgctcac gtggcaactg tggggacca gacaggttat	300
caaaggcacc cggcttttcc gccttcagga gcatcccccac tagtgaattc tagtggggct	360
ctgcttggtg ccaacctccc ccaaatgcgc gctgcgggag tgctcttccc caacccatcc	420
tagtatcctc tcatgtgtgt gcttggtcag catatctgag acgacgttcc gctgtcccag	480
accagtccag taatggacgg gccagtgtgc gtagtcgtct tccggcttgt ccggcgcattg	540
tttgggtgaac cgggtgggta aggttggtgt gcccaacgcc cgtactttgg tgacacctca	600
agaccacca ggaatgccag ggaggtaccc cgctcacgg cgggatctga ccctgggcta	660
attgtctacg gtggttcttc ttgcttcac ttctttctt	699

<210> 62

<211> 624

<212> DNA

<213> Unknown

<220>

<221> source

<223> /note="Description of Unknown:
Salivirus A sequence"

<400> 62

ttctcctgca accattacgc ttaatcgcatt gtgcattgag tggatgcatt gttgaacaaa	60
cagctacaat cacatggggg cgggttttcc cgccccacgg cttctcgcga ggcccatccc	120
tcccttttct ccataacta cagtgccttg gtaggtaagc atcccgatct cccgcggaag	180
ctgctcacgt ggcaactgtg gggaccaga caggttatca aaggcaccgc gtctttccgc	240
cttcaggagt atccctgcta gcgaattcta gtagggctct gcttggtgcc aacctctccc	300
aatgcgcgc tgcgggagtg ctcttccca aatcaccca gtatcctctc atgtgtgtgc	360
ctggctcagca tatctgagac gatgttccgc tgtcccagac cagtccagta atggacgggc	420
cagtgtgcgt agtcgtcctc cggcttgctc ggccgatgtt tggatgaacc gtggggtaag	480
gttggtgtgc ccaacgccc taatcagggg atacctcaag gcaccagga atgccagga	540
ggtatccgc ctcacagcgg gatctgacct tggggtaaat gtctgcgggg ggtcctcttg	600

gccaattct cagtaatttt cagg

624

<210> 63

<211> 650

<212> DNA

<213> Unknown

<220>

<221> source

<223> /note="Description of Unknown:
Salivirus A sequence"

<400> 63

tctgtcctca ccccatcttc ctttctttcc tgcaccgtta cgcttactcg catgtgcatt 60

gagtgggtgca cgtgcttgaa caaacagcta cactcacatg ggggcgggtt ttcccgcctt 120

gcggcctctc gcgaggccca cccctcccct tcctcccata actacagtgc tttggtaggt 180

aagcatcctg atccccgcg gaagctgctc acgtggcaac tgtggggacc cagacaggtt 240

atcaaaggca cccggtcttt ccgccttcag gagtatccct gctagtgaat tctagtaggg 300

ctctgcttgg tgccaacctc ccccaaagtc gcgctgcggg agtgctcttc cccaactcac 360

cctagtatcc tctcatgtgt gtgcttggtc agcatatctg agacgatgtt ccgctgtccc 420

agaccagtcc agtaatggac gggccagtgt gcgtagtcgt cttccggctt gtccggcgca 480

tgtttggtga accggtgggg taaggttggt gtgccaacg cccgtacttt ggtgatacct 540

caagaccacc caggaatgcc agggaggtag cccgcttcac agcgggatct gaccctgggc 600

taattgtcta cggtggttct tcttgcttcc acttctttct actgttcatg 650

<210> 64

<211> 730

<212> DNA

<213> Unknown

<220>

<221> source

<223> /note="Description of Unknown:
Salivirus FHB sequence"

<400> 64

acatgggggg tctgcggacg gcttcggccc acccgcgaca agaatgccgt catctgtcct 60

cattaccgtg attccttccc ttccccgca accaccacgc ttactcgcgc acgtgttgag 120

tggcacgtgc gttgtccaaa cagctacacc cacacccttc ggggcgggtt tgtccccccc 180

tcgggttcct cgcggaaccc cccctccct ctctctctt ctatccgcc tcacttcca	240
taactacagt gctttggtag gtgagcacc tgacccccg cggaagctgc taacgtggca	300
actgtgggga tccaggcagg ttatcaaagg caccgggtct ttccgccttc aggagtatct	360
ctgccggtga attccggtag ggctctgctt ggtgcccaacc tccccaaat gcgcgctgcg	420
ggagtgtctt tccccaaact atcttagtaa cctctcatgt gtgtgcttgg tcagcatatc	480
tgaggcgacg ttccgctgtc ccagaccagt ccagcaatgg acgggccagt gtgcgtagtc	540
gctttccggt tttccggcgc atgtttggcg aaacgctgag gtaaggttgg tgtgccaac	600
gcccgtaatt tggatgatacc tcaagaccac ccaggaatgc cagggaggta cccacttcg	660
gtgggatctg accctgggct aattgtctac ggtggttctt cttgcttcca cttctctttt	720
ttctggcatg	730

<210> 65
 <211> 741
 <212> DNA
 <213> Unknown

<220>
 <221> source
 <223> /note="Description of Unknown:
 CVB3 sequence"

<400> 65	
ttaaaacagc ctgtgggttg atcccacca caggccatt gggcgctagc actctggtat	60
cacggtacct ttgtgcgcct gttttatacc ccctcccca actgtaactt agaagtaaca	120
cacaccgatc aacagtcagc gtggcacacc agccacgttt tgatcaagca cttctgttac	180
cccggactga gtatcaatag actgctcacg cggttgaagg agaaagcgtt cgttatccgg	240
ccaactactt cgaaaaacct agtaacaccg tggaagtgtc agagtgtttc gctcagcact	300
acccagtggt agatcagggtc gatgagtcac cgcattcccc acgggcgacc gtggcggtgg	360
ctgcgttggc ggctgcccc tggggaaacc catgggacgc tctaatacag acatggtgcg	420
aagagtctat tgagctagtt ggtagtcctc cggcccctga atgcggctaa tcctaactgc	480
ggagcacaca ccctcaagcc agagggcagt gtgtcgtaac gggcaactct gcagcggaac	540
cgactacttt ggggtgtccgt gtttcatttt attcctatac tggctgctta tggtgacaat	600
tgagagatcg ttacatata gctattggat tggccatccg gtgactaata gagctattat	660

atatcccttt gttgggttta taccacttag cttgaaagag gttaaaacat tacaattcat	720
tgттаagttg aatacagcaa a	741

<210> 66
 <211> 741
 <212> DNA
 <213> Unknown

<220>
 <221> source
 <223> /note="Description of Unknown:
 CVB1 sequence"

<400> 66	
ttaaaacagc ctgtgggttg ttcccaccca caggccatt gggcgctagc actctggtat	60
cacggtacct ttgtgcgcct gttttacatc ccctcccaa attgtaattt agaagtttca	120
cacaccgatc attagcaagc gtggcacacc agccatgttt tgatcaagca cttctgttac	180
cccggactga gtatcaatag accgctaacg cggttgaagg agaaaacgtt cgttaccgg	240
ccaactactt cgaaaaacct agtaacacca tggaagtgc ggagtgtttc gctcagcact	300
acccagtggt agatcagggtc gatgagtcac cgcgttcccc acgggcgacc gtggcggtgg	360
ctgcgttggtc ggcctgccta cggggaaacc cgtaggacgc tctaatacag acatgggtgcg	420
aagagtctat tgagctagtt ggtaatctc cggcccctga atgcggctaa tcctaactgc	480
ggagcacata ccctcaaacc agggggcagt gtgtcgtaac gggcaactct gcagcggaac	540
cgactacttt ggggtgtccgt gtttcatttt attcctatac tggctgctta tggtgacaat	600
tgacaggttg ttaccatata gttattggat tggccatccg gtgactaaca gagcaattat	660
atatctcttt gttgggttta taccacttag cttgaaagag gttaaaacac tacatctcat	720
cattaaacta aatacaacaa a	741

<210> 67
 <211> 742
 <212> DNA
 <213> Unknown

<220>
 <221> source
 <223> /note="Description of Unknown:
 Echovirus 7 sequence"

<400> 67

ttaaaacagc ctgtgggttg ttcccaccca cagggcccat tgggcgtcag caccctggta	60
tcacggtacc tttgtgcgcc tgttttatat cccttcccc aattgtaact tagaagaaac	120
acacaccgat caacagcaag cgtggcacac cagccatgtt ttggtcaagc acttctgtta	180
ccccggactg agtatcaata gactgctcac gcggttgaag gagaaagcgt ccgttatccg	240
gccagctact tcgagaaacc tagtaacacc atggaagttg cggagtgttt cgctcagcac	300
taccccagtg tagatcaggt cgatgagtca ccgctttccc cacgggcgac cgtggcggtg	360
gctgcgttgg cggcctgcct atgggggaac ccataggacg ctctaataca gacatggtgc	420
gaagagtcta ttgagctagc tgggtattcct ccggcccctg aatgcggcta atcctaactg	480
tggagcacat gcccctaadc caaggggtag tgtgtcgtaa tgagcaattc cgcagcggaa	540
ccgactactt tgggtgtccg tgtttcctct tattcttgta ctggctgctt atggtgacaa	600
ttgagagatt gttaccatat agctattgga ttggccatcc ggtgactaat agagctattg	660
tgtatctctt tgttggattt gtaccactta atttgaaaga aatcaggaca ctacgtaca	720
ttttactatt gaacaccgca aa	742

<210> 68

<211> 743

<212> DNA

<213> Unknown

<220>

<221> source

<223> /note="Description of Unknown:
CVB5 sequence"

<400> 68

ttaaaacagc ctgtgggttg taccaccca cagggcccac tgggcgctag cactctggta	60
tcacggtacc tttgtgcgcc tgttttatgc cccttcccc caattgaaac ttagaagtta	120
cacacaccga tcaacagcgg gcgtggcata ccagccgcgt cttgatcaag cactcctgtt	180
tccccggacc gagtatcaat agactgctca cgcggttgaa ggagaaaacg ttcgttacc	240
ggctaactac ttcgagaaac ctagtagcat catgaaagtt gcgaagcgtt tcgctcagca	300
catccccagt gtagatcagg tcgatgagtc accgcattcc ccacgggcga ccgtggcggt	360
ggctgcgttg gcggcctgcc tacggggcaa cccgtaggac gcttcaatac agacatgggtg	420
cgaagagtcg attgagctag ttagtagtcc tccggcccct gaatccggct aatcctaact	480

gcggagcaca taccctcaac ccagggggca ttgtgtcgta acgggtaact ctgcagcgga	540
accgactact ttgggtgtcc gtgtttcctt ttattcttat aatggctgct tatggtgaca	600
attgaaagat tgttaccata tagctattgg attggccatc cgggtgtctaa cagagctatt	660
atatacctct ttgttggatt tgtaccactt gatctaaagg aagtcaagac actacaattc	720
atcatacaat tgaacacagc aaa	743

<210> 69
 <211> 743
 <212> DNA
 <213> Unknown

<220>
 <221> source
 <223> /note="Description of Unknown:
 Enterovirus A71 sequence"

<400> 69	
ttaaaacagc ctgtgggttg caccctca cagggccac tgggcgcaag cactctggca	60
cttcggtacc tttgtgcgcc tgttttatat cccctcccc aatgaaattt agaagcagca	120
aaccccgatc aatagcaggc ataacgtcc agttatgtct tgatcaagca cttctgtttc	180
cccggactga gtatcaatag actgctcacg cggttgaagg agaaaacgtt cgttatccgg	240
ctaactactt cggaaagcct agtaacacca tggaagttgc ggagagtttc gttcagcact	300
tccccagtgt agatcaggtc gatgagtcac cgcattcccc acgggcgacc gtggcggtgg	360
ctgcgttggc ggcctgcca tggggtaacc catgggacgc tctaatacgg acatgggtgtg	420
aagagtctac tgagctagtt agtagtcctc cggcccctga atgcggctaa tcccaactgc	480
ggagcacacg cccacaagcc agtgggtagt gtgtcgtaac gggcaactct gcagcggaac	540
cgactacttt ggggtgtccgt gtttcctttt attcttatgt tggctgctta tggtgacaat	600
taaagagttg ttaccatata gctattggat tggccatccg gtgtgcaaca gagcgatcgt	660
ttacctatth attggttttg taccattgac actgaagtct gtgatcacc ttaattttat	720
cttaaccctc aacacagcca aac	743

<210> 70
 <211> 742
 <212> DNA
 <213> Unknown

<220>
 <221> source
 <223> /note="Description of Unknown:
 CVA3 sequence"

<400> 70
 ttaaaacagc ctgtgggttg taccaccca cagggccac tggcgctag cacactggta 60
 ttacggtacc tttgtgcgcc tgttttatac ccccccaac ctcgaaactt agaagtaaag 120
 caaaccgat caatagcagg tgcggcgcac cagtcgcac ttgatcaagc acttctgtaa 180
 ccccgaccg agtatcaata gactgctcac gcggttgaag gagaaaacgt tcgttaccg 240
 gctaactact tcgagaaacc cagtagcatc atgaaagttg cagagtgttt cgctcagcac 300
 taccctcgtg tagatcaggc cgatgagtca ccgcacttcc ccacgggcga ccgtggcggt 360
 ggctgcgttg gcggcctgcc tatggggcaa cccataggac gctctaatac ggacatgggtg 420
 cgaagagtct attgagctag ttagtagtcc tccggcccct gaatgcggct aatcctaact 480
 gcggagcaca tacccttaat ccaaagggca gtgtgtcgta acgggtaact ctgcagcgga 540
 accgactact ttgggtgtcc gtgtttcctt ttaattttta ctggctgctt atggtgacaa 600
 ttgaggaatt gttgcatat agctattgga ttggccatcc ggtgactaac agagctattg 660
 tgttccaatt tgttggattt accccgctca cactcacagt cgtaagaacc cttcattacg 720
 tgttatttct caactcaaga aa 742

<210> 71
 <211> 745
 <212> DNA
 <213> Unknown

<220>
 <221> source
 <223> /note="Description of Unknown:
 CVA12 sequence"

<400> 71
 ttaaaacagc ctgtgggttg taccaccca cagggccac tggcgctag cactctggta 60
 ctacggtacc tttgtgtgcc tgttttaagc ccctaccccc cactcgtaac ttagaaggct 120
 tctcacactc gatcaatagt aggtgtggca cgccagtcac accgtgatca agcacttctg 180
 ttaccccggt ctgagtacca ataagctgct aacgcggctg aaggggaaaa cgatcggtat 240
 ccggctaact acttcgagaa acccagtacc accatgaacg ttgcagggtg tttcgctcgg 300

cacaacccca gtgtagatca ggtcgaatgag tcaccgtatt cccacgggc gaccgtggcg	360
gtggctgcgt tggcgccctg cccatggggg gacccatggg acgctctaata actgacatgg	420
tgcaagagt ctattgagct agttagtagt cctccggccc ctgaatgcgg ctaatcctaa	480
ctgcggagca cataccctta atccaaaggg cagtgtgtcg taacgggcaa ctctgcagcg	540
gaaccgacta ctttgggtgt ccgtgtttcc ttttattctt acattggctg cttatggtga	600
caattgaaaa gttgttacca tatagctatt ggattggcca tccggtgaca aatagagcta	660
ttgtatatct tttgttgggt tacgtacccc ttaattacaa agtgggttca actttgaaat	720
acatcctaac actaaattgt agaaa	745

<210> 72

<211> 742

<212> DNA

<213> Unknown

<220>

<221> source

<223> /note="Description of Unknown:
Echovirus E24 sequence"

<400> 72

ttaaaacagc ctgtgggttg caccaccca cagggccac agggcgctag cactctggta	60
tcacggtacc tttgtgcgc tgttttatta ccccttcccc aattgaaaat tagaagcaat	120
gcacaccgat caacagcagg cgtggcgcac cagtcacgtc tcgatcaagc acttctgttt	180
ccccggaccg agtatcaata gactgctcac gcggttgaag gagaaagtgt tcgttatccg	240
gctaaccact tcgagaaacc cagtaacacc atgaaagtgt cagggtgttt cgctcagcac	300
ttccccagtg tagatcaggt cgatgagtca ccgcgttccc cacgggcgac cgtggcggtg	360
gctgcgttgg cggcctgcct atgggttaac ccataggacg ctctaataca gacatggtgc	420
gaagagttta ttgagctgggt tagtatccct ccggcccctg aatgcggcta atcctaactg	480
cggagcacgt gcctccaatc caggggggtg catgtcgtaa cgggtaactc tgcagcggaa	540
ccgactactt tgggtgtccg tgtttccttt tattcttata ctggctgctt atggtgacaa	600
tcgaggaatt gttacatat agctattgga ttggccatcc ggtgtctaac agagcgatta	660
tatacctctt tgttggtttt atgcagctca ataccaccaa ctttaacaca ttgaaatata	720
tcttaaagtt aaacacagca aa	742

<210> 73
 <211> 240
 <212> DNA
 <213> Anabaena sp.

<400> 73
 gaagaaattc tttaagtgga tgctctcaaa ctgagggaac cctaaatcta gttatagaca 60
 aggcaatcct gagccaagcc gaagtagtaa ttagtaagtt aacaatagat gacttacaac 120
 taatcggaag gtgcagagac tcgacgggag ctaccctaac gtcaagacga gggtaaagag 180
 agagtccaat tctcaaagcc aataggcagt agcgaaagct gcaagagaat gaaaatccgt 240

<210> 74
 <211> 239
 <212> DNA
 <213> Anabaena sp.

<400> 74
 aagaaattct ttaagtggat gctctcaaac tcagggaac ctaaacttag ttatagacaa 60
 ggcaatcctg agccaagccg aagtagtaat tagtaagtta acaatagatg acttacaact 120
 aatcggaagg tgcagagact cgacgggagc taccctaacg tcaagacgag ggtaaagaga 180
 gagtccaatt ctcaaagcca ataggcagta gcgaaagctg caagagaatg aaaatccgt 239

<210> 75
 <211> 238
 <212> DNA
 <213> Anabaena sp.

<400> 75
 agaaattctt taagtggatg ctctcaaact cagggaacc taaatctagt tatagacaag 60
 gcaatcctga gccaagccga agtagtaatt agtaagttaa caatagatga cttacaacta 120
 atcggaaggt gcagagactc gacgggagct accctaactg caagacgagg gtaaagagag 180
 agtccaattc tcaaagccaa taggcagtag cgaaagctgc aagagaatga aaatccgt 238

<210> 76
 <211> 190
 <212> DNA
 <213> Anabaena sp.

<400> 76
 gttatagaca aggcaatcct gagccaagcc gaagtagtaa ttagtaagtt aacaatagat 60

gacttacaac taatcggaag gtgcagagac tcgacgggag ctaccctaac gtcaagacga	120
gggtaaagag agagtccaat tctcaaagcc aataggcagt agcgaaagct gcaagagaat	180
gaaaatccgt	190

<210> 77
 <211> 189
 <212> DNA
 <213> Anabaena sp.

<400> 77	
ttatagacaa ggcaatcctg agccaagccg aagtagtaat tagtaagtta acaatagatg	60
acttacaact aatcggaagg tgcaagagact cgacggggagc taccctaacg tcaagacgag	120
ggtaaagaga gagtccaatt ctcaaagcca ataggcagta gcgaaagctg caagagaatg	180
aaaatccgt	189

<210> 78
 <211> 188
 <212> DNA
 <213> Anabaena sp.

<400> 78	
tatagacaag gcaatcctga gccaagccga agtagtaatt agtaagttaa caatagatga	60
cttacaacta atcggaaggt gcagagactc gacggggagct accctaacgt caagacgagg	120
gtaaagagag agtccaattc tcaaagccaa taggcagtag cgaaagctgc aagagaatga	180
aaatccgt	188

<210> 79
 <211> 187
 <212> DNA
 <213> Anabaena sp.

<400> 79	
atagacaagg caatcctgag ccaagccgaa gtagtaatta gtaagttaac aatagatgac	60
ttacaactaa tcggaaggtg cagagactcg acggggagcta ccctaacgtc aagacgaggg	120
taaagagaga gtccaattct caaagccaat aggcagtagc gaaagctgca agagaatgaa	180
aatccgt	187

<210> 80
 <211> 186

<212> DNA

<213> *Anabaena* sp.

<400> 80

tagacaaggc aatcctgagc caagccgaag tagtaattag taagttaaca atagatgact 60

tacaactaat cggaagggtc agagactcga cgggagctac cctaactgca agacgagggt 120

aaagagagag tccaattctc aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa 180

atccgt 186

<210> 81

<211> 139

<212> DNA

<213> *Anabaena* sp.

<400> 81

acaatagatg acttacaact aatcggaagg tgcagagact cgacgggagc taccctaacg 60

tcaagacgag ggtaaagaga gagtccaatt ctcaaagcca ataggcagta gcgaaagctg 120

caagagaatg aaaatccgt 139

<210> 82

<211> 138

<212> DNA

<213> *Anabaena* sp.

<400> 82

caatagatga cttacaacta atcggaagggt gcagagactc gacgggagct accctaacgt 60

caagacgagg gtaaagagag agtccaattc tcaaagccaa taggcagtag cgaaagctgc 120

aagagaatga aaatccgt 138

<210> 83

<211> 137

<212> DNA

<213> *Anabaena* sp.

<400> 83

aatagatgac ttacaactaa tcggaagggtg cagagactcg acgggagcta ccctaacgtc 60

aagacgaggg taaagagaga gtccaattct caaagccaat aggcagtagc gaaagctgca 120

agagaatgaa aatccgt 137

<210> 84

<211> 136

<212> DNA

<213> Anabaena sp.

<400> 84

atagatgact tacaactaat cggaaggtgc agagactcga cgggagctac cctaactgca 60

agacgagggt aaagagagag tccaattctc aaagccaata ggtagtagcg aaagctgcaa 120

gagaatgaaa atccgt 136

<210> 85

<211> 135

<212> DNA

<213> Anabaena sp.

<400> 85

tagatgactt acaactaatc ggaaggtgca gagactcgac gggagctacc ctaactgcaa 60

gacgagggtta aagagagagt ccaattctca aagccaatag gcagtagcga aagctgcaag 120

agaatgaaaa tccgt 135

<210> 86

<211> 134

<212> DNA

<213> Anabaena sp.

<400> 86

agatgactta caactaatcg gaaggtgcag agactcgacg ggagctaccc taactgcaag 60

acgagggttaa agagagagtc caattctcaa agccaatagg cagtagcgaa agctgcaaga 120

gaatgaaaat ccgt 134

<210> 87

<211> 133

<212> DNA

<213> Anabaena sp.

<400> 87

gatgacttac aactaatcgg aaggtgcaga gactcgacgg gagctaccct aactgcaaga 60

cgagggtaaa gagagagtcc aattctcaaa gccaataggc agtagcgaaa gctgcaagag 120

aatgaaaatc cgt 133

<210> 88

<211> 132

<212> DNA

<213> Anabaena sp.

<400> 88
 atgacttaca actaatcgga aggtgcagag actcgacggg agctacccta acgtcaagac 60
 gagggtaaag agagagtcca attctcaaag ccaataggca gtagcgaaag ctgcaagaga 120
 atgaaaatcc gt 132

<210> 89
 <211> 131
 <212> DNA
 <213> Anabaena sp.

<400> 89
 tgacttaca ctaatcgga ggtgcagaga ctcgacggga gctaccctaa cgtcaagacg 60
 agggtaaaga gagagtccaa ttctcaaagc caataggcag tagcgaaagc tgcaagagaa 120
 tgaaaatccg t 131

<210> 90
 <211> 78
 <212> DNA
 <213> Anabaena sp.

<400> 90
 caagacgagg gtaaagagag agtccaattc tcaaagccaa taggcagtag cgaaagctgc 60
 aagagaatga aaatccgt 78

<210> 91
 <211> 77
 <212> DNA
 <213> Anabaena sp.

<400> 91
 aagacgaggg taaagagaga gtccaattct caaagccaat aggcagtagc gaaagctgca 60
 agagaatgaa aatccgt 77

<210> 92
 <211> 76
 <212> DNA
 <213> Anabaena sp.

<400> 92
 agacgaggg aaagagagag tccaattctc aaagccaata ggcagtagcg aaagctgcaa 60
 gagaatgaaa atccgt 76

<210> 93
 <211> 75
 <212> DNA
 <213> Anabaena sp.

<400> 93
 gacgagggtta aagagagagt ccaattctca aagccaatag gcagtagcga aagctgcaag 60
 agaatgaaaa tccgt 75

<210> 94
 <211> 74
 <212> DNA
 <213> Anabaena sp.

<400> 94
 acgagggtta agagagagtc caattctcaa agccaatagg cagtagcgaa agctgcaaga 60
 gaatgaaaat ccgt 74

<210> 95
 <211> 40
 <212> DNA
 <213> Anabaena sp.

<400> 95
 aataggcagt agcgaaagct gcaagagaat gaaaatccgt 40

<210> 96
 <211> 39
 <212> DNA
 <213> Anabaena sp.

<400> 96
 ataggcagta gcgaaagctg caagagaatg aaaatccgt 39

<210> 97
 <211> 38
 <212> DNA
 <213> Anabaena sp.

<400> 97
 taggcagtag cgaaagctgc aagagaatga aaatccgt 38

<210> 98
 <211> 37
 <212> DNA
 <213> Anabaena sp.

<400> 98 aggcagtagc gaaagctgca agagaatgaa aatccgt	37
<210> 99 <211> 36 <212> DNA <213> Anabaena sp.	
<400> 99 ggcagtagcg aaagctgcaa gagaatgaaa atccgt	36
<210> 100 <211> 27 <212> DNA <213> Anabaena sp.	
<400> 100 gaaagctgca agagaatgaa aatccgt	27
<210> 101 <211> 26 <212> DNA <213> Anabaena sp.	
<400> 101 aaagctgcaa gagaatgaaa atccgt	26
<210> 102 <211> 25 <212> DNA <213> Anabaena sp.	
<400> 102 aagctgcaag agaatgaaaa tccgt	25
<210> 103 <211> 24 <212> DNA <213> Anabaena sp.	
<400> 103 agctgcaaga gaatgaaaat ccgt	24
<210> 104 <211> 23 <212> DNA <213> Anabaena sp.	

<400> 104 gctgcaagag aatgaaaatc cgt	23
<210> 105 <211> 22 <212> DNA <213> Anabaena sp.	
<400> 105 ctgcaagaga atgaaaatcc gt	22
<210> 106 <211> 18 <212> DNA <213> Anabaena sp.	
<400> 106 aagagaatga aaatccgt	18
<210> 107 <211> 17 <212> DNA <213> Anabaena sp.	
<400> 107 agagaatgaa aatccgt	17
<210> 108 <211> 16 <212> DNA <213> Anabaena sp.	
<400> 108 gagaatgaaa atccgt	16
<210> 109 <211> 35 <212> DNA <213> Anabaena sp.	
<400> 109 gcagtagcga aagctgcaag agaatgaaaa tccgt	35
<210> 110 <211> 33 <212> DNA <213> Anabaena sp.	

<400> 110 agtagcgaaa gctgcaagag aatgaaaatc cgt	33
<210> 111 <211> 32 <212> DNA <213> Anabaena sp.	
<400> 111 gtagcgaaag ctgcaagaga atgaaaatcc gt	32
<210> 112 <211> 26 <212> DNA <213> Anabaena sp.	
<400> 112 acggacttaa ataattgagc cttaaa	26
<210> 113 <211> 27 <212> DNA <213> Anabaena sp.	
<400> 113 acggacttaa ataattgagc cttaaag	27
<210> 114 <211> 28 <212> DNA <213> Anabaena sp.	
<400> 114 acggacttaa ataattgagc cttaaaga	28
<210> 115 <211> 76 <212> DNA <213> Anabaena sp.	
<400> 115 acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca	60
gggaaaccta aatcta	76
<210> 116 <211> 77	

<212> DNA
 <213> Anabaena sp.

 <400> 116
 acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca 60
 gggaaaccta aatctag 77

 <210> 117
 <211> 78
 <212> DNA
 <213> Anabaena sp.

 <400> 117
 acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca 60
 gggaaaccta aatctagt 78

 <210> 118
 <211> 79
 <212> DNA
 <213> Anabaena sp.

 <400> 118
 acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca 60
 gggaaaccta aatctagtt 79

 <210> 119
 <211> 80
 <212> DNA
 <213> Anabaena sp.

 <400> 119
 acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca 60
 gggaaaccta aatctagtta 80

 <210> 120
 <211> 127
 <212> DNA
 <213> Anabaena sp.

 <400> 120
 acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca 60
 gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag 120
 taagtta 127

<210> 121
 <211> 128
 <212> DNA
 <213> Anabaena sp.

<400> 121
 acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca 60
 gggaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag 120
 taagttaa 128

<210> 122
 <211> 129
 <212> DNA
 <213> Anabaena sp.

<400> 122
 acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca 60
 gggaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag 120
 taagttaac 129

<210> 123
 <211> 130
 <212> DNA
 <213> Anabaena sp.

<400> 123
 acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca 60
 gggaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag 120
 taagttaaca 130

<210> 124
 <211> 131
 <212> DNA
 <213> Anabaena sp.

<400> 124
 acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca 60
 gggaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag 120
 taagttaaca a 131

<210> 125

<211> 132
 <212> DNA
 <213> Anabaena sp.

<400> 125
 acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca 60
 gggaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag 120
 taagttaaca at 132

<210> 126
 <211> 133
 <212> DNA
 <213> Anabaena sp.

<400> 126
 acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca 60
 gggaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag 120
 taagttaaca ata 133

<210> 127
 <211> 134
 <212> DNA
 <213> Anabaena sp.

<400> 127
 acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca 60
 gggaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag 120
 taagttaaca atag 134

<210> 128
 <211> 135
 <212> DNA
 <213> Anabaena sp.

<400> 128
 acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca 60
 gggaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag 120
 taagttaaca ataga 135

<210> 129
 <211> 188
 <212> DNA

<213> Anabaena sp.

<400> 129

acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca 60

gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag 120

taagttaaca atagatgact tacaactaat cggaaggtgc agagactcga cgggagctac 180

cctaacgt 188

<210> 130

<211> 189

<212> DNA

<213> Anabaena sp.

<400> 130

acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca 60

gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag 120

taagttaaca atagatgact tacaactaat cggaaggtgc agagactcga cgggagctac 180

cctaacgtc 189

<210> 131

<211> 190

<212> DNA

<213> Anabaena sp.

<400> 131

acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca 60

gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag 120

taagttaaca atagatgact tacaactaat cggaaggtgc agagactcga cgggagctac 180

cctaacgtca 190

<210> 132

<211> 191

<212> DNA

<213> Anabaena sp.

<400> 132

acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca 60

gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag 120

taagttaaca atagatgact tacaactaat cggaaggtgc agagactcga cgggagctac 180

cctaacgtca a 191

<210> 133
 <211> 192
 <212> DNA
 <213> Anabaena sp.

<400> 133
 acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca 60
 gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag 120
 taagttaaca atagatgact tacaactaat cggaaggtgc agagactcga cgggagctac 180
 cctaacgtca ag 192

<210> 134
 <211> 226
 <212> DNA
 <213> Anabaena sp.

<400> 134
 acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca 60
 gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag 120
 taagttaaca atagatgact tacaactaat cggaaggtgc agagactcga cgggagctac 180
 cctaacgtca agacgagggt aaagagagag tccaattctc aaagcc 226

<210> 135
 <211> 227
 <212> DNA
 <213> Anabaena sp.

<400> 135
 acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca 60
 gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag 120
 taagttaaca atagatgact tacaactaat cggaaggtgc agagactcga cgggagctac 180
 cctaacgtca agacgagggt aaagagagag tccaattctc aaagcca 227

<210> 136
 <211> 228
 <212> DNA
 <213> Anabaena sp.

<400> 136

acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca	60
gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag	120
taagttaaca atagatgact tacaactaat cggaaggtgc agagactcga cgggagctac	180
cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaa	228

<210> 137
 <211> 229
 <212> DNA
 <213> Anabaena sp.

<400> 137	
acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca	60
gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag	120
taagttaaca atagatgact tacaactaat cggaaggtgc agagactcga cgggagctac	180
cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaat	229

<210> 138
 <211> 230
 <212> DNA
 <213> Anabaena sp.

<400> 138	
acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca	60
gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag	120
taagttaaca atagatgact tacaactaat cggaaggtgc agagactcga cgggagctac	180
cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaata	230

<210> 139
 <211> 239
 <212> DNA
 <213> Anabaena sp.

<400> 139	
acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca	60
gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag	120
taagttaaca atagatgact tacaactaat cggaaggtgc agagactcga cgggagctac	180
cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaata ggcagtagc	239

<210> 140
 <211> 240
 <212> DNA
 <213> Anabaena sp.

<400> 140
 acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca 60
 gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag 120
 taagttaaca atagatgact tacaactaat cggaagggtgc agagactcga cgggagctac 180
 cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaata ggcagtagcg 240

<210> 141
 <211> 241
 <212> DNA
 <213> Anabaena sp.

<400> 141
 acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca 60
 gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag 120
 taagttaaca atagatgact tacaactaat cggaagggtgc agagactcga cgggagctac 180
 cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaata ggcagtagcg 240
 a 241

<210> 142
 <211> 242
 <212> DNA
 <213> Anabaena sp.

<400> 142
 acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca 60
 gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag 120
 taagttaaca atagatgact tacaactaat cggaagggtgc agagactcga cgggagctac 180
 cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaata ggcagtagcg 240
 aa 242

<210> 143
 <211> 243
 <212> DNA
 <213> Anabaena sp.

<400> 143
acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca 60
gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag 120
taagttaaca atagatgact tacaactaat cggaagggtc agagactcga cgggagctac 180
cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaata ggcagtagcg 240
aaa 243

<210> 144
<211> 244
<212> DNA
<213> Anabaena sp.

<400> 144
acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca 60
gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag 120
taagttaaca atagatgact tacaactaat cggaagggtc agagactcga cgggagctac 180
cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaata ggcagtagcg 240
aaag 244

<210> 145
<211> 248
<212> DNA
<213> Anabaena sp.

<400> 145
acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca 60
gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag 120
taagttaaca atagatgact tacaactaat cggaagggtc agagactcga cgggagctac 180
cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaata ggcagtagcg 240
aaagctgc 248

<210> 146
<211> 249
<212> DNA
<213> Anabaena sp.

<400> 146
acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca 60

gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag	120
taagttaaca atagatgact tacaactaat cggaagggtgc agagactcga cgggagctac	180
cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaata ggcagtagcg	240
aaagctgca	249

<210> 147
 <211> 250
 <212> DNA
 <213> Anabaena sp.

<400> 147	
acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca	60
gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag	120
taagttaaca atagatgact tacaactaat cggaagggtgc agagactcga cgggagctac	180
cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaata ggcagtagcg	240
aaagctgcaa	250

<210> 148
 <211> 231
 <212> DNA
 <213> Anabaena sp.

<400> 148	
acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca	60
gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag	120
taagttaaca atagatgact tacaactaat cggaagggtgc agagactcga cgggagctac	180
cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaata g	231

<210> 149
 <211> 233
 <212> DNA
 <213> Anabaena sp.

<400> 149	
acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca	60
gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag	120
taagttaaca atagatgact tacaactaat cggaagggtgc agagactcga cgggagctac	180
cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaata ggc	233

<210> 150

<211> 234

<212> DNA

<213> *Anabaena* sp.

<400> 150

acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca 60

gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag 120

taagttaaca atagatgact tacaactaat cggaagggtc agagactcga cgggagctac 180

cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaata ggca 234

<210> 151

<211> 104

<212> DNA

<213> *Azoarcus* sp.

<400> 151

tgcgccgatg aagggtgtaga gactagacgg caccaccta aggcaaacgc tatggtgaag 60

gcatagtcca gggagtggcg aaagtcacac aaaccggaat ccgt 104

<210> 152

<211> 141

<212> DNA

<213> *Azoarcus* sp.

<400> 152

ccgggcgtat ggcaacgccg agccaagctt cggcgcctgc gccgatgaag gtgtagagac 60

tagacggcac ccacctaagg caaacgttat ggtgaaggca tagtccaggg agtggcgaaa 120

gtcacacaaa ccggaatccg t 141

<210> 153

<211> 78

<212> DNA

<213> *Azoarcus* sp.

<400> 153

acggcaccca cctaaggcaa acgctatggt gaaggcatag tccaggagggt ggcgaaagtc 60

acacaaaccg gaatccgt 78

<210> 154

<211> 58

<212> DNA
 <213> Azoarcus sp.

 <400> 154
 acgctatggt gaaggcatag tccagggagt ggcgaaagtc acacaaaccg gaatccgt 58

 <210> 155
 <211> 75
 <212> DNA
 <213> Thiomargarita sp.

 <400> 155
 attaaagtta tagaattatc agagaatgat atagtccaag cttatggta acatgagggc 60

 acttgaccct ggtag 75

 <210> 156
 <211> 195
 <212> DNA
 <213> Staphylococcus virus Twort

 <400> 156
 aagatgtagg caatcctgag ctaagctctt agtaataaga gaaagtgcaa cgactattcc 60

 gataggaagt aggggtcaagt gactcgaaat ggggattacc cttctagggt agtgatatag 120

 tctgaacata tatggaaaca tatagaagga taggagtaac gaacctattc gtaacataat 180

 tgaactttta gttat 195

 <210> 157
 <211> 163
 <212> DNA
 <213> Staphylococcus virus Twort

 <400> 157
 taataagaga aagtgcaacg actattccga taggaagtag ggtcaagtga ctcgaaatgg 60

 ggattaccct tctagggtag tgatatagtc tgaacatata tggaaacata tagaaggata 120

 ggagtaacga acctattcgt aacataattg aacttttagt tat 163

 <210> 158
 <211> 133
 <212> DNA
 <213> Staphylococcus virus Twort

 <400> 158
 taggaagtag ggtcaagtga ctcgaaatgg ggattaccct tctagggtag tgatatagtc 60

tgaacatata tggaaacata tagaaggata ggagtaacga acctattcgt aacataattg 120

aacttttagt tat 133

<210> 159
 <211> 92
 <212> DNA
 <213> Staphylococcus virus Twort

<400> 159
 ctaggtagt gatatagtct gaacatatat ggaaacatat agaaggatag gagtaacgaa 60

cctattcgta acataattga acttttagtt at 92

<210> 160
 <211> 92
 <212> DNA
 <213> Unknown

<220>
 <221> source
 <223> /note="Description of Unknown:
 LSup1 sequence"

<400> 160
 agttaataaa gatgatgaaa tagtctgaac cattttgaga aaagtggaaa taaaagaaaa 60

tccttttatga taacataaat tgaacaggct aa 92

<210> 161
 <211> 62
 <212> DNA
 <213> Unknown

<220>
 <221> source
 <223> /note="Description of Unknown:
 Bacteriophage Phi I sequence"

<400> 161
 caaagactga tgatatagtc cgacactcct agtaatagga gaatacagaa aggatgaaat 60

cc 62

<210> 162
 <211> 76
 <212> DNA
 <213> Nostoc sp.

<400> 162

agtcgagggt aaagggagag tccaattctc aaagcctatt ggcagtagcg aaagctgcgg 60
gagaatgaaa atccgt 76

<210> 163
<211> 76
<212> DNA
<213> Nostoc sp.

<400> 163
agccgagggt aaagggagag tccaattctc aaagccaata ggcagtagcg aaagctgcgg 60
gagaatgaaa atccgt 76

<210> 164
<211> 89
<212> DNA
<213> Nodularia sp.

<400> 164
agccgagggt aaagggagag tccaattctc aaagccgaag gttattaaaa cctggcagca 60
gtgaaagctg cgggagaatg aaaatccgt 89

<210> 165
<211> 79
<212> DNA
<213> Pleurocapsa sp.

<400> 165
agctgagggt aaagagagag tccaattctc aaagccagca gatggcagta gcgaaagctg 60
cgggagaatg aaaatccgt 79

<210> 166
<211> 76
<212> DNA
<213> Planktothrix sp.

<400> 166
agccgagggt aaagagagag tccaattctc aaagccaatt ghtagtagcg aaagctacgg 60
gagaatgaaa atccgt 76

<210> 167
<211> 118
<212> DNA
<213> Azoarcus sp.

<400> 167
 gcggactcat atttcgatgt gccttgcgcc gggaaaccac gcaagggatg gtgtcaaatt 60
 cggcgaaacc taagcgcccg cccgggcgta tggcaacgcc gagccaagct tcggcgcc 118

<210> 168
 <211> 81
 <212> DNA
 <213> Azoarcus sp.

<400> 168
 gcggactcat atttcgatgt gccttgcgcc gggaaaccac gcaagggatg gtgtcaaatt 60
 cggcgaaacc taagcgcccg c 81

<210> 169
 <211> 144
 <212> DNA
 <213> Azoarcus sp.

<400> 169
 gcggactcat atttcgatgt gccttgcgcc gggaaaccac gcaagggatg gtgtcaaatt 60
 cggcgaaacc taagcgcccg cccgggcgta tggcaacgcc gagccaagct tcggcgctg 120
 cgccgatgaa ggtgtagaga ctag 144

<210> 170
 <211> 164
 <212> DNA
 <213> Azoarcus sp.

<400> 170
 gcggactcat atttcgatgt gccttgcgcc gggaaaccac gcaagggatg gtgtcaaatt 60
 cggcgaaacc taagcgcccg cccgggcgta tggcaacgcc gagccaagct tcggcgctg 120
 cgccgatgaa ggtgtagaga ctagacggca cccacctaag gcaa 164

<210> 171
 <211> 179
 <212> DNA
 <213> Thiomargarita sp.

<400> 171
 aggattagat actacactaa gtgtcccca gactggtgac agtctggtgt gcatccagct 60
 atatcggtga aacccattg gggtataacc gaggggaagct atattatata tatattaata 120
 aatagcccg tagagactat gtaggtaagg agatagaaga tgataaaatc aaaatcatc 179

<210> 172
 <211> 84
 <212> DNA
 <213> Staphylococcus virus Twort

<400> 172
 actactgaaa gcataaataa ttgtgccttt atacagtaat gtatatcgaa aaatcctcta 60
 attcaggga cacctaaaca aact 84

<210> 173
 <211> 116
 <212> DNA
 <213> Staphylococcus virus Twort

<400> 173
 actactgaaa gcataaataa ttgtgccttt atacagtaat gtatatcgaa aaatcctcta 60
 attcaggga cacctaaaca aactaagatg taggcaatcc tgagctaagc tcttag 116

<210> 174
 <211> 146
 <212> DNA
 <213> Staphylococcus virus Twort

<400> 174
 actactgaaa gcataaataa ttgtgccttt atacagtaat gtatatcgaa aaatcctcta 60
 attcaggga cacctaaaca aactaagatg taggcaatcc tgagctaagc tcttagtaat 120
 aagagaaagt gcaacgacta ttccga 146

<210> 175
 <211> 187
 <212> DNA
 <213> Staphylococcus virus Twort

<400> 175
 actactgaaa gcataaataa ttgtgccttt atacagtaat gtatatcgaa aaatcctcta 60
 attcaggga cacctaaaca aactaagatg taggcaatcc tgagctaagc tcttagtaat 120
 aagagaaagt gcaacgacta ttccgatagg aagtagggtc aagtgactcg aaatggggat 180
 taccctt 187

<210> 176
 <211> 216

<212> DNA
<213> Unknown

<220>
<221> source
<223> /note="Description of Unknown:
LSUp1 sequence"

<400> 176
cgctagggat ttataactgt gagtcctcca atattataaa atgttggtaa tatattgggt 60
aaatttcaaa gacaactttt ctccacgtca ggatatagtg tatttgaagc gaaacttatt 120
ttagcagtga aaaagcaa at aaggacgttc aacgactaaa aggtgagtat tgctaacaat 180
aatccttttt tttaatgccc aacatcttta ttaact 216

<210> 177
<211> 559
<212> DNA
<213> Unknown

<220>
<221> source
<223> /note="Description of Unknown:
Bacteriophage Phi I sequence"

<400> 177
gtgggtgcat aaactatttc attgtgcaca ttaaactctgg tgaactcggg gaaaccctaa 60
tggggcaata ccgagccaag ccatagggag gatatatgag aggcaagaag ttaattcttg 120
aggccactga gactggctgt atcatcccta cgtcacacaa acttaatgcc gatgggtatt 180
tcagaaagaa aaccaatggc gtcttagaga tgtatcacag aacgggtgtgg aaggagcata 240
acggagacat acctgatggc ttcgagatag accataagtg tcgcaatagg gcttgctgta 300
atatagagca ttacagatg cttgagggtta cagcccacac tgtaagacc aatcgtgaac 360
gctacgcaga cagaaaggaa acagctaggg aatactggct ggagactgga tgtaccggcc 420
tagcactcgg tgagaagttt ggtgtgtcgt tctcttctgc ttgtaagtgg attagagaat 480
ggaaggcgta gagactatcc gaaaggagta gggccgaggg tgagactccc tcgtaaccgc 540
aagcgccaga cagtcaact 559

<210> 178
<211> 218
<212> DNA
<213> Nostoc sp.

<400> 178
acggacttaa gtaattgagc cttaaagaag aaattcttta agtggcagct ctcaaactca 60
gggaaaccta aatctgttca cagacaaggc aatcctgagc caagccgaaa gagtcagtga 120
tgctgagtag tgagtaaaat aaaagctcac aactcagagg ttgtaactct aagctagtcg 180
gaaggtgcag agactcgacg ggagctaccc taacgtaa 218

<210> 179
<211> 165
<212> DNA
<213> Nostoc sp.

<400> 179
acggacttaa actgaattga gccttagaga agaaattctt taagtgtcag ctctcaaact 60
cagggaaccc taaatctgtt gacagacaag gcaatcctga gccaaagccga gaactctaag 120
ttattcggaa ggtgcagaga ctcgacggga gctaccctaa cgtca 165

<210> 180
<211> 181
<212> DNA
<213> Nodularia sp.

<400> 180
acggacttag aaaactgagc cttgatcgag aaatctttca agtgggaagct ctcaaattca 60
gggaaaccta aatctgttta cagatatggc aatcctgagc caagccgaaa caagtcctga 120
gtgttaaagc tcataactca tcggaagggtg cagagactcg acgggagcta ccctaactgt 180
a 181

<210> 181
<211> 188
<212> DNA
<213> Pleurocapsa sp.

<400> 181
acggacttaa aaaaattgag ccttggcaga gaaatctgtc atgcgaacgc tctcaaattc 60
agggaacact aagtctggca acagatatgg caatcctgag ccaagcctta atcaaggaaa 120
aaaacatttt taccttttac cttgaaagga aggtgcagag actcaacggg agctacccta 180
acaggtca 188

<210> 182
 <211> 200
 <212> DNA
 <213> Planktothrix sp.

<400> 182
 acggacttaa agataaattg agccttgagg cgagaaatct ctcaagtgtgta agctgtcaaaa 60
 ttcagggaata cctaaatctg taaattcaga caaggcaatc ctgagccaag cctaggggta 120
 ttagaaatga gggagtttcc ccaatctaag atcaatacct aggaaggtgc agagactcga 180
 cgggagctac cctaactgta 200

<210> 183
 <211> 166
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 183
 agtatataag aaacaaacca ctagatgact tacaactaat cggaaggtgc agagactcga 60
 cgggagctac cctaactgta agacgagggt aaagagagag tccaattctc aaagccaata 120
 ggcagtagcg aaagctgcaa gagaatgaaa atccgtggct cgcagc 166

<210> 184
 <211> 176
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 184
 ctgaaattat acttatactc aaacaaacca ctagatgact tacaactaat cggaaggtgc 60
 agagactcga cgggagctac cctaactgta agacgagggt aaagagagag tccaattctc 120
 aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa atccgtggct cgcagc 176

<210> 185
 <211> 186
 <212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 185

ctgaaattat acttatactc agtatatgac aaacaaacca ctagatgact tacaactaat 60

cggaaggtgc agagactcga cgggagctac cctaactgca agacgagggt aaagagagag 120

tccaattctc aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa atccgtggct 180

cgcagc 186

<210> 186

<211> 196

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 186

catcaacaat atgaaattat acttatactc agtatatgac aaacaaacca ctagatgact 60

tacaactaat cggaaggtgc agagactcga cgggagctac cctaactgca agacgagggt 120

aaagagagag tccaattctc aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa 180

atccgtggct cgcagc 196

<210> 187

<211> 206

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 187

catcaacaat atgaaactat acttatactc agtatatgaa gcattatcgc aaacaaacca 60

ctagatgact tacaactaat cggaaggtgc agagactcga cgggagctac cctaactgca 120

agacgagggt aaagagagag tccaattctc aaagccaata ggcagtagcg aaagctgcaa 180

gagaatgaaa atccgtggct cgcagc 206

<210> 188

<211> 166

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 188

tagcgtcagc aaacaaacaa atagatgact tacaactaat cggaaggtgc agagactcga 60

cgggagctac cctaactgca agacgagggt aaagagagag tccaattctc aaagccaata 120

ggcagtagcg aaagctgcaa gagaatgaaa atccgtggct cgcagc 166

<210> 189

<211> 176

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 189

atactcatac tagcgtcagc aaacaaacaa atagatgact tacaactaat cggaaggtgc 60

agagactcga cgggagctac cctaactgca agacgagggt aaagagagag tccaattctc 120

aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa atccgtggct cgcagc 176

<210> 190

<211> 186

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 190

gtgtgaagct atactcatac tagcgtcagc aaacaaacaa atagatgact tacaactaat 60

cggaaggtgc agagactcga cgggagctac cctaactgca agacgagggt aaagagagag 120

tccaattctc aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa atccgtggct	180
cgcagc	186
<210> 191	
<211> 196	
<212> DNA	
<213> Artificial Sequence	
<220>	
<221> source	
<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"	
<400> 191	
cctcacctga gtgtgaagct atactcatac tagcgtcagc aaacaacaaa atagatgact	60
tacaactaat cggaagggtc agagactcga cgggagctac cctaactgca agacgagggt	120
aaagagagag tccaattctc aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa	180
atccgtggct cgcagc	196
<210> 192	
<211> 206	
<212> DNA	
<213> Artificial Sequence	
<220>	
<221> source	
<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"	
<400> 192	
ccgaatgatg cctcacctga gtgtgaagct atactcatac tagcgtcagc aaacaacaaa	60
atagatgact tacaactaat cggaagggtc agagactcga cgggagctac cctaactgca	120
agacgagggt aaagagagag tccaattctc aaagccaata ggcagtagcg aaagctgcaa	180
gagaatgaaa atccgtggct cgcagc	206
<210> 193	
<211> 166	
<212> DNA	
<213> Artificial Sequence	
<220>	
<221> source	
<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"	

<400> 193
 cgggtgcgagc aaacaaacaa atagatgact tacaactaat cggaaggtgc agagactcga 60
 cgggagctac cctaactgtca agacgagggt aaagagagag tccaattctc aaagccaata 120
 ggcagtagcg aaagctgcaa gagaatgaaa atccgtggct cgcagc 166

<210> 194
 <211> 176
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 194
 cgctccgacc cagtgcgagc aaacaaacaa atagatgact tacaactaat cggaaggtgc 60
 agagactcga cgggagctac cctaactgtca agacgagggt aaagagagag tccaattctc 120
 aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa atccgtggct cgcagc 176

<210> 195
 <211> 186
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 195
 ctgaaattat actaatactc agtatatgac aaacaaacca ctagatgact tacaactaat 60
 cggaaggtgc agagactcga cgggagctac cctaactgtca agacgagggt aaagagagag 120
 tccaattctc aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa atccgtggct 180
 cgcagc 186

<210> 196
 <211> 186
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source

<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 196
ctgaaaatat actaatactc actatatgac aaacaaacca ctagatgact tacaactaat 60
cggaaggtgc agagactcga cgggagctac cctaactgca agacgagggt aaagagagag 120
tccaattctc aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa atccgtggct 180
cgcagc 186

<210> 197
<211> 186
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 197
ctgataatat agtaatactc actatatgac aaacaaacca ctagatgact tacaactaat 60
cggaaggtgc agagactcga cgggagctac cctaactgca agacgagggt aaagagagag 120
tccaattctc aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa atccgtggct 180
cgcagc 186

<210> 198
<211> 186
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 198
ctgataataa agtaatacac actataagac aaacaaacca ctagatgact tacaactaat 60
cggaaggtgc agagactcga cgggagctac cctaactgca agacgagggt aaagagagag 120
tccaattctc aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa atccgtggct 180
cgcagc 186

<210> 199

<211> 186
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

 <400> 199
 ctgaaattat acttatactc tctaagttac aaacaaacca ctagatgact tacaactaat 60

 cggaaggtgc agagactcga cgggagctac cctaactgca agacgagggt aaagagagag 120
 tccaattctc aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa atccgtggct 180
 cgcagc 186

 <210> 200
 <211> 186
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

 <400> 200
 ctgaaattat gtgtgttaca tctaagttac aaacaaacca ctagatgact tacaactaat 60

 cggaaggtgc agagactcga cgggagctac cctaactgca agacgagggt aaagagagag 120
 tccaattctc aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa atccgtggct 180
 cgcagc 186

 <210> 201
 <211> 186
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

 <400> 201
 gttgatcggt gtgtgttaca tctaagttac aaacaaacca ctagatgact tacaactaat 60
 cggaaggtgc agagactcga cgggagctac cctaactgca agacgagggt aaagagagag 120

tccaattctc aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa atccgtggct	180
cgcagc	186

<210> 202
 <211> 186
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 202	
ctgaaattat acttatactc agtatatgac aaacaaacca ctagatgact tacaactaat	60
cggaaggtgc agagactcga cgggagctac cctaacgtca agacgagggt aaagagagag	120
tccaattctc aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa atccgtgatt	180
aaacag	186

<210> 203
 <211> 196
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 203	
ctgaaattat acttatactc agtatatgac aaacaaacca ctagatgact tacaactaat	60
cggaaggtgc agagactcga cgggagctac cctaacgtca agacgagggt aaagagagag	120
tccaattctc aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa atccgtgatt	180
cacaatataa attacg	196

<210> 204
 <211> 186
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 204
 ctgaaattat acttatactc agtatatgac aaacaaacca ctagatgact tacaactaat 60
 cggaaggtgc agagactcga cgggagctac cctaactgca agacgagggt aaagagagag 120
 tccaattctc aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa atccgtggat 180
 catagc 186

<210> 205
 <211> 196
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic
 polynucleotide"

<400> 205
 ctgaaattat acttatactc agtatatgac aaacaaacca ctagatgact tacaactaat 60
 cggaaggtgc agagactcga cgggagctac cctaactgca agacgagggt aaagagagag 120
 tccaattctc aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa atccgtggat 180
 cgcagcataa tatccg 196

<210> 206
 <211> 196
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic
 polynucleotide"

<400> 206
 ctgaaattat acttatactc agtatatgac aaacaaacca ctagatgact tacaactaat 60
 cggaaggtgc agagactcga cgggagctac cctaactgca agacgagggt aaagagagag 120
 tccaattctc aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa atccgtggct 180
 cgcagcgcg ctagcg 196

<210> 207
 <211> 219
 <212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 207

ctgaaattat acttatactc agtatatgac aaacaaacca ctagatgact tacaactaat 60

cggaaggtgc agagactcga cgggagctac cctaactgca agacgagggt aaagagagag 120

tccaattctc aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa atccgtggct 180

cgcagcgcg ctagcgaaag cggcgctcga cgttagcgc 219

<210> 208

<211> 219

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 208

ctgaaattat acttatactc agtatatgac aaacaaacca ctagatgact tacaactaat 60

cggaaggtgc agagactcga cgggagctac cctaactgca agacgagggt aaagagagag 120

tccaattctc aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa atccgtggat 180

cgcagcataa tatccgaaac gaggatacaa gtgacatgc 219

<210> 209

<211> 219

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 209

ctgaaattat acttatactc agtatatgac aaacaaacca ctagatgact tacaactaat 60

cggaaggtgc agagactcga cgggagctac cctaactgca agacgagggt aaagagagag 120

tccaattctc aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa atccgtgatt 180

cacaatctaa attacgaaac gataaatgat aactctaac 219

<210> 210
 <211> 156
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 210
 aaacaaacca ctagatgact tacaactaat cggaaggtgc agagactcga cgggagctac 60
 cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaata ggcagtagcg 120
 aaagctgcaa gagaatgaaa atccgtggct cgcagc 156

<210> 211
 <211> 161
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 211
 cgggcaaaca aacaaataga tgacttaca ctaatcgga ggtgcagaga ctcgacggga 60
 gctaccctaa cgtcaagacg agggtaaaga gagagtcaa ttctcaaagc caataggcag 120
 tagcgaaagc tgcaagagaa tgaaaatccg tggctcgcag c 161

<210> 212
 <211> 186
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 212
 cgctccgacg agcttccggc cagtgcgagc aaacaaaca atagatgact tacaactaat 60
 cggaaggtgc agagactcga cgggagctac cctaacgtca agacgagggt aaagagagag 120

tccaattctc aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa atccgtggct	180
cgcagc	186
<210> 213 <211> 57 <212> DNA <213> Artificial Sequence	
<220> <221> source <223> /note="Description of Artificial Sequence: Synthetic oligonucleotide"	
<400> 213 aaacaaacca cggcagtagc gaaagctgca agagaatgaa aatccgtggc tcgcagc	57
<210> 214 <211> 67 <212> DNA <213> Artificial Sequence	
<220> <221> source <223> /note="Description of Artificial Sequence: Synthetic oligonucleotide"	
<400> 214 agtatataag aaacaaacca cggcagtagc gaaagctgca agagaatgaa aatccgtggc	60
tcgcagc	67
<210> 215 <211> 77 <212> DNA <213> Artificial Sequence	
<220> <221> source <223> /note="Description of Artificial Sequence: Synthetic oligonucleotide"	
<400> 215 ctgaaattat acttatactc aaacaaacca cggcagtagc gaaagctgca agagaatgaa	60
aatccgtggc tcgcagc	77
<210> 216 <211> 87 <212> DNA	

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
oligonucleotide"

<400> 216

ctgaaattat acttatactc agtatatgac aaacaaacca cggcagtagc gaaagctgca 60

agagaatgaa aatccgtggc tcgcagc 87

<210> 217

<211> 67

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
oligonucleotide"

<400> 217

tagcgtcagc aaacaaacaa aggtagtagc gaaagctgca agagaatgaa aatccgtggc 60

tcgcagc 67

<210> 218

<211> 77

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
oligonucleotide"

<400> 218

atattcattac tagcgtcagc aaacaaacaa aggtagtagc gaaagctgca agagaatgaa 60

aatccgtggc tcgcagc 77

<210> 219

<211> 87

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
oligonucleotide"

<400> 219
 gtgtgaagct atactcatac tagcgtagc aaacaaacaa aggtagc gaaagctgca 60
 agagaatgaa aatccgtggc tcgcagc 87

<210> 220
 <211> 67
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic
 oligonucleotide"

<400> 220
 cggtagc aaacaaacaa aggtagc gaaagctgca agagaatgaa aatccgtggc 60
 tcgcagc 67

<210> 221
 <211> 77
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic
 oligonucleotide"

<400> 221
 cgctccgacc cagtagc aaacaaacaa aggtagc gaaagctgca agagaatgaa 60
 aatccgtggc tcgcagc 77

<210> 222
 <211> 87
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic
 oligonucleotide"

<400> 222
 cgctccgacc agcttccggc cagtagc aaacaaacaa aggtagc gaaagctgca 60
 agagaatgaa aatccgtggc tcgcagc 87

<210> 223
 <211> 98
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic
 oligonucleotide"

 <400> 223
 aaacaaacca caagacgagg gtaaagagag agtccaattc tcaaagccaa taggcagtag 60

 cgaaagctgc aagagaatga aaatccgtgg ctcgcagc 98

 <210> 224
 <211> 108
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic
 polynucleotide"

 <400> 224
 agtatataag aaacaaacca caagacgagg gtaaagagag agtccaattc tcaaagccaa 60

 taggcagtag cgaaagctgc aagagaatga aaatccgtgg ctcgcagc 108

 <210> 225
 <211> 118
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic
 polynucleotide"

 <400> 225
 ctgaaattat acttatactc aaacaaacca caagacgagg gtaaagagag agtccaattc 60

 tcaaagccaa taggcagtag cgaaagctgc aagagaatga aaatccgtgg ctcgcagc 118

 <210> 226
 <211> 128
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 226
 ctgaaattat acttatactc agtatatgac aaacaaacca caagacgagg gtaaagagag 60
 agtccaattc tcaaagccaa taggcagtag cgaaagctgc aagagaatga aaatccgtgg 120
 ctcgcagc 128

<210> 227
 <211> 108
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 227
 tagcgtcagc aaacaaacca aaagacgagg gtaaagagag agtccaattc tcaaagccaa 60
 taggcagtag cgaaagctgc aagagaatga aaatccgtgg ctcgcagc 108

<210> 228
 <211> 118
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 228
 atactcatag tagcgtcagc aaacaaacca aaagacgagg gtaaagagag agtccaattc 60
 tcaaagccaa taggcagtag cgaaagctgc aagagaatga aaatccgtgg ctcgcagc 118

<210> 229
 <211> 128
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 229
gtgtgaagct atactcatac tagcgtcagc aaacaaacaa aaagacgagg gtaaagagag 60
agtccaattc tcaaagccaa taggcagtag cgaaagctgc aagagaatga aaatccgtgg 120
ctcgcagc 128

<210> 230
<211> 108
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 230
cgggtgcgagc aaacaaacaa aaagacgagg gtaaagagag agtccaattc tcaaagccaa 60
taggcagtag cgaaagctgc aagagaatga aaatccgtgg ctcgcagc 108

<210> 231
<211> 118
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 231
cgctccgacc cagtgcgagc aaacaaacaa aaagacgagg gtaaagagag agtccaattc 60
tcaaagccaa taggcagtag cgaaagctgc aagagaatga aaatccgtgg ctcgcagc 118

<210> 232
<211> 128
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 232
cgctccgagc agcttccggc cagtgcgagc aaacaaacaa aaagacgagg gtaaagagag 60

agtccaattc tcaaagccaa taggcagtag cgaaagctgc aagagaatga aaatccgtgg 120
 ctcgcagc 128

 <210> 233
 <211> 176
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic
 polynucleotide"

 <400> 233
 ctgaaattat acttatactc agtatatgac aaacaaacca ctagatgact tacaactaat 60
 cggaaggtgc agagactcga cgggagctac cctaactgca agacgagggt aaagagagag 120
 tccaattctc aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa atccgt 176

 <210> 234
 <211> 77
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic
 oligonucleotide"

 <400> 234
 ctgaaattat acttatactc agtatatgac aaacaaacca cggcagtagc gaaagctgca 60
 agagaatgaa aatccgt 77

 <210> 235
 <211> 87
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic
 oligonucleotide"

 <400> 235
 ctgaaattat acttatactc agtatatgac aaacaaacca cggcagtagc gaaagctgca 60
 agagaatgaa aatccgtgat taaacag 87

<210> 236
 <211> 97
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic
 oligonucleotide"

 <400> 236
 ctgaaattat acttatactc agtatatgac aaacaaacca cggcagtagc gaaagctgca 60

 agagaatgaa aatccgtgat tcacaatata aattacg 97

 <210> 237
 <211> 87
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic
 oligonucleotide"

 <400> 237
 ctgaaattat acttatactc agtatatgac aaacaaacca cggcagtagc gaaagctgca 60

 agagaatgaa aatccgtgga tcatagc 87

 <210> 238
 <211> 97
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic
 oligonucleotide"

 <400> 238
 ctgaaattat acttatactc agtatatgac aaacaaacca cggcagtagc gaaagctgca 60

 agagaatgaa aatccgtgga tcgcagcata atatccg 97

 <210> 239
 <211> 97
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic
 oligonucleotide"

<400> 239
 ctgaaattat acttatactc agtatatgac aaacaaacca cggcagtagc gaaagctgca 60
 agagaatgaa aatccgtggc tcgcagcgcg cctaccg 97

<210> 240
 <211> 118
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic
 polynucleotide"

<400> 240
 ctgaaattat acttatactc agtatatgac aaacaaacca caagacgagg gtaaagagag 60
 agtccaattc tcaaagccaa taggcagtag cgaaagctgc aagagaatga aaatccgt 118

<210> 241
 <211> 128
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic
 polynucleotide"

<400> 241
 ctgaaattat acttatactc agtatatgac aaacaaacca caagacgagg gtaaagagag 60
 agtccaattc tcaaagccaa taggcagtag cgaaagctgc aagagaatga aaatccgtga 120
 ttaaacag 128

<210> 242
 <211> 138
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic
 polynucleotide"

<400> 242
 ctgaaattat acttatactc agtatatgac aaacaaacca caagacgagg gtaaagagag 60
 agtccaattc tcaaagccaa taggcagtag cgaaagctgc aagagaatga aaatccgtga 120
 ttcacaatat aaattacg 138

<210> 243
 <211> 128
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic
 polynucleotide"

<400> 243
 ctgaaattat acttatactc agtatatgac aaacaaacca caagacgagg gtaaagagag 60
 agtccaattc tcaaagccaa taggcagtag cgaaagctgc aagagaatga aaatccgtgg 120
 atcatagc 128

<210> 244
 <211> 138
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic
 polynucleotide"

<400> 244
 ctgaaattat acttatactc agtatatgac aaacaaacca caagacgagg gtaaagagag 60
 agtccaattc tcaaagccaa taggcagtag cgaaagctgc aagagaatga aaatccgtgg 120
 atcgagcat aatatccg 138

<210> 245
 <211> 138
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic
 polynucleotide"

<400> 245
ctgaaattat acttatactc agtatatgac aaacaaacca caagacgagg gtaaagagag 60
agtccaattc tcaaagccaa taggcagtag cgaaagctgc aagagaatga aaatccgtgg 120
ctcgcagcgc gcctaccg 138

<210> 246
<211> 162
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 246
gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60
ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120
tagtaattag taagttaaca acacaaacac aacttatata ct 162

<210> 247
<211> 172
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 247
gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60
ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120
tagtaattag taagttaaca acacaaacac aagagtataa gtataatttc ag 172

<210> 248
<211> 182
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 248
gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60
ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120
tagtaattag taagttaaca acacaaacac aagtcataata ctgagtataa gtataatttc 180
ag 182

<210> 249
<211> 192
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 249
gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60
ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120
tagtaattag taagttaaca acacaaacac aagtcataata ctgagtataa gtataatttc 180
atattgttga tg 192

<210> 250
<211> 202
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 250
gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60
ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120
tagtaattag taagttaaca acacaaacac aagcgataat gttcatata ctgagtataa 180
gtatagtttc atattgttga tg 202

<210> 251
<211> 162
<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 251

gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60

ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120

tagtaattag taagttaaca aaacaaaaac aagctgacgc ta 162

<210> 252

<211> 172

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 252

gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60

ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120

tagtaattag taagttaaca aaacaaaaac aagctgacgc tagtatgagt at 172

<210> 253

<211> 182

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 253

gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60

ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120

tagtaattag taagttaaca aaacaaaaac aagctgacgc tagtatgagt atagcttcac 180

ac 182

<210> 254

<211> 192
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

 <400> 254
 gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60
 ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120
 tagtaattag taagttaaca aaacaaaaac aagctgacgc tagtatgagt atagcttcac 180
 actcaggtga gg 192

 <210> 255
 <211> 202
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

 <400> 255
 gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60
 ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120
 tagtaattag taagttaaca aaacaaaaac aagctgacgc tagtatgagt atagcttcac 180
 actcaggtga ggcatcattc gg 202

 <210> 256
 <211> 162
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

 <400> 256
 gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60
 ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120

tagtaattag taagttaaca aaacaaaaac aagctcgac cg 162

<210> 257
<211> 172
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 257
gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60
ctcaaactca gggaaacctta aatctagtta tagacaaggc aatcctgagc caagccgaag 120
tagtaattag taagttaaca aaacaaaaac aagctcgac tgggtcggag cg 172

<210> 258
<211> 182
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 258
gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60
ctcaaactca gggaaacctta aatctagtta tagacaaggc aatcctgagc caagccgaag 120
tagtaattag taagttaaca acacaaacac aagtcataata ctgagtataa gtataatttc 180
ag 182

<210> 259
<211> 182
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 259
gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60

ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag	120
tagtaattag taagttaaca acacaaacac aagtcataata ctgagtataa gtataatttc	180
ag	182

<210> 260
 <211> 182
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 260	
gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct	60
ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag	120
tagtaattag taagttaaca acacaaacac aagtcataata ctgagtataa gtataatttc	180
ag	182

<210> 261
 <211> 182
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 261	
gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct	60
ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag	120
tagtaattag taagttaaca acacaaacac aagtcataata ctgagtataa gtataatttc	180
ag	182

<210> 262
 <211> 182
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source

<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 262
gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60
ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120
tagtaattag taagttaaca acacaaacac aagtaactta gagagtataa gtataatttc 180
ag 182

<210> 263
<211> 182
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 263
gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60
ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120
tagtaattag taagttaaca acacaaacac aagtaactta gatgtaacac acataatttc 180
ag 182

<210> 264
<211> 182
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 264
gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60
ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120
tagtaattag taagttaaca acacaaacac aagtaactta gatgtaacac acaccgatca 180
ac 182

<210> 265

<211> 182
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

 <400> 265
 ctgtttaatc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60

 ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120
 tagtaattag taagttaaca acacaaacac aagtcataata ctgagtataa gtataatttc 180
 ag 182

<210> 266
 <211> 192
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

 <400> 266
 cgtaatttat attgtgaatc acggacttaa ataattgagc cttaaagaag aaattcttta 60

 agtggatgct ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc 120
 caagccgaag tagtaattag taagttaaca acacaaacac aagtcataata ctgagtataa 180
 gtataatttc ag 192

<210> 267
 <211> 182
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

 <400> 267
 gctatgatcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60

 ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120

tagtaattag taagttaaca acacaaacac aagtcataata ctgagtataa gtataatttc	180
ag	182
<210> 268	
<211> 192	
<212> DNA	
<213> Artificial Sequence	
<220>	
<221> source	
<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"	
<400> 268	
cggatattat gctgcatcc acggacttaa ataattgagc cttaaagaag aaattcttta	60
agtggatgct ctcaaactca gggaaacctt aatctagtta tagacaaggc aatcctgagc	120
caagccgaag tagtaattag taagttaaca acacaaacac aagtcataata ctgagtataa	180
gtataatttc ag	192
<210> 269	
<211> 192	
<212> DNA	
<213> Artificial Sequence	
<220>	
<221> source	
<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"	
<400> 269	
cggtaggcgc gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta	60
agtggatgct ctcaaactca gggaaacctt aatctagtta tagacaaggc aatcctgagc	120
caagccgaag tagtaattag taagttaaca acacaaacac aagtcataata ctgagtataa	180
gtataatttc ag	192
<210> 270	
<211> 215	
<212> DNA	
<213> Artificial Sequence	
<220>	
<221> source	
<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"	

<400> 270
 gcgctaacgt cgacgccggc aaacggtagg cgcgctgcga gccacggact taaataattg 60
 agccttaaag aagaaattct ttaagtggat gctctcaaac tcagggaac ctaaattag 120
 ttatagacaa ggcaatcctg agccaagccg aagtagtaat tagtaagtta acaacacaaa 180
 cacaagtcac atactgagta taagtataat ttcag 215

<210> 271
 <211> 215
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 271
 gcatgtcact tgtatcctcg aaacggatat tatgctgcga tccacggact taaataattg 60
 agccttaaag aagaaattct ttaagtggat gctctcaaac tcagggaac ctaaattag 120
 ttatagacaa ggcaatcctg agccaagccg aagtagtaat tagtaagtta acaacacaaa 180
 cacaagtcac atactgagta taagtataat ttcag 215

<210> 272
 <211> 215
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 272
 gttagagtta tcatttatcg aaacgtaatt tagattgtga atcacggact taaataattg 60
 agccttaaag aagaaattct ttaagtggat gctctcaaac tcagggaac ctaaattag 120
 ttatagacaa ggcaatcctg agccaagccg aagtagtaat tagtaagtta acaacacaaa 180
 cacaagtcac atactgagta taagtataat ttcag 215

<210> 273
 <211> 152
 <212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 273

gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60

ctcaaactca gggaaacctt aatctagtta tagacaaggc aatcctgagc caagccgaag 120

tagtaattag taagttaaca acacaaacac aa 152

<210> 274

<211> 157

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 274

gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60

ctcaaactca gggaaacctt aatctagtta tagacaaggc aatcctgagc caagccgaag 120

tagtaattag taagttaaca aaacaaaaac aagcccg 157

<210> 275

<211> 182

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 275

gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60

ctcaaactca gggaaacctt aatctagtta tagacaaggc aatcctgagc caagccgaag 120

tagtaattag taagttaaca aaacaaaaac aagctcgac tggccggaag ctcgtcggag 180

cg 182

<210> 276

<211> 251
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 276
gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60
ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120
tagtaattag taagttaaca atagatgact tacaactaat cggaagggtgc agagactcga 180
cgggagctac cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaata 240
cacaaacaca a 251

<210> 277
<211> 261
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 277
gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60
ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120
tagtaattag taagttaaca atagatgact tacaactaat cggaagggtgc agagactcga 180
cgggagctac cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaata 240
cacaaacaca acttatatac t 261

<210> 278
<211> 271
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 278

gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct	60
ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag	120
tagtaattag taagttaaca atagatgact tacaactaat cggaagggtgc agagactcga	180
cgggagctac cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaata	240
cacaaacaca agagtataag tataatttca g	271

<210> 279
 <211> 281
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 279	
gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct	60
ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag	120
tagtaattag taagttaaca atagatgact tacaactaat cggaagggtgc agagactcga	180
cgggagctac cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaata	240
cacaaacaca agtcatatac tgagtataag tataatttca g	281

<210> 280
 <211> 261
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 280	
gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct	60
ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag	120
tagtaattag taagttaaca atagatgact tacaactaat cggaagggtgc agagactcga	180
cgggagctac cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaata	240
aacaaaaaca agctgacgct a	261

<210> 281
<211> 271
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 281
gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60
ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120
tagtaattag taagttaaca atagatgact tacaactaat cggaagggtgc agagactcga 180
cgggagctac cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaata 240
aacaaaaaca agctgacgct agtatgagta t 271

<210> 282
<211> 281
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 282
gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60
ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120
tagtaattag taagttaaca atagatgact tacaactaat cggaagggtgc agagactcga 180
cgggagctac cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaata 240
aacaaaaaca agctgacgct agtatgagta tagcttcaca c 281

<210> 283
<211> 261
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 283
gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60
ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120
tagtaattag taagttaaca atagatgact tacaactaat cggaagggtgc agagactcga 180
cgggagctac cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaata 240
aacaaaaaca agctcgacc g 261

<210> 284
<211> 271
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 284
gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60
ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120
tagtaattag taagttaaca atagatgact tacaactaat cggaagggtgc agagactcga 180
cgggagctac cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaata 240
aacaaaaaca agctcgact gggtcggagc g 271

<210> 285
<211> 281
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 285
gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60
ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120
tagtaattag taagttaaca atagatgact tacaactaat cggaagggtgc agagactcga 180
cgggagctac cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaata 240

aacaaaaaca agctcgact ggccggaagc tcgtcggagc g 281

<210> 286
 <211> 210
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 286
 gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60
 ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120
 tagtaattag taagttaaca atagatgact tacaactaat cggaagggtgc agagactcga 180
 cgggagctac cctaacgtcc acaaacacaa 210

<210> 287
 <211> 220
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 287
 gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60
 ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120
 tagtaattag taagttaaca atagatgact tacaactaat cggaagggtgc agagactcga 180
 cgggagctac cctaacgtcc acaaacacaa cttatatact 220

<210> 288
 <211> 230
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 288

gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct	60
ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag	120
tagtaattag taagttaaca atagatgact tacaactaat cggaagggtgc agagactcga	180
cgggagctac cctaacgtcc acaaacacaa gagtataagt ataatttcag	230

<210> 289
 <211> 240
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct	60
ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag	120
tagtaattag taagttaaca atagatgact tacaactaat cggaagggtgc agagactcga	180
cgggagctac cctaacgtcc acaaacacaa gtcataact gagtataagt ataatttcag	240

<210> 290
 <211> 220
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct	60
ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag	120
tagtaattag taagttaaca atagatgact tacaactaat cggaagggtgc agagactcga	180
cgggagctac cctaacgtca aaaaaacaa gctgacgcta	220

<210> 291
 <211> 230
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 291
 gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60
 ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120
 tagtaattag taagttaaca atagatgact tacaactaat cggaagggtgc agagactcga 180
 cgggagctac cctaacgtca acaaaaacaa gctgacgcta gtatgagtat 230

<210> 292
 <211> 240
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 292
 gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60
 ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120
 tagtaattag taagttaaca atagatgact tacaactaat cggaagggtgc agagactcga 180
 cgggagctac cctaacgtca acaaaaacaa gctgacgcta gtatgagtat agcttcacac 240

<210> 293
 <211> 220
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 293
 gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60
 ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120
 tagtaattag taagttaaca atagatgact tacaactaat cggaagggtgc agagactcga 180
 cgggagctac cctaacgtca acaaaaacaa gctcgacaccg 220

<210> 294
 <211> 230
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

 <400> 294
 gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60
 ctcaaactca gggaaacct aatctagtta tagacaaggc aatcctgagc caagccgaag 120
 tagtaattag taagttaaca atagatgact tacaactaat cggaagggtgc agagactcga 180
 cgggagctac cctaactgca aaaaaaaca gctcgactg ggtcggagcg 230

 <210> 295
 <211> 240
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

 <400> 295
 gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60
 ctcaaactca gggaaacct aatctagtta tagacaaggc aatcctgagc caagccgaag 120
 tagtaattag taagttaaca atagatgact tacaactaat cggaagggtgc agagactcga 180
 cgggagctac cctaactgca aaaaaaaca gctcgactg gccggaagct cgtcggagcg 240

 <210> 296
 <211> 172
 <212> DNA
 <213> Artificial Sequence

 <220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

 <400> 296
 acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca 60

gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag 120
 taagttaaca acacaaacac aagtcataata ctgagtataa gtataatttc ag 172

<210> 297
 <211> 271
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 297
 acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca 60
 gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag 120
 taagttaaca atagatgact tacaactaat cggaagggtgc agagactcga cgggagctac 180
 cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaata cacaacaca 240
 agtcatatac tgagtataag tataatttca g 271

<210> 298
 <211> 281
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 298
 ctgtttaatc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60
 ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120
 tagtaattag taagttaaca atagatgact tacaactaat cggaagggtgc agagactcga 180
 cgggagctac cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaata 240
 cacaacaca agtcatatac tgagtataag tataatttca g 281

<210> 299
 <211> 291
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 299
 cgtaatttat attgtgaatc acggacttaa ataattgagc cttaaagaag aaattcttta 60
 agtggatgct ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc 120
 caagccgaag tagtaattag taagttaaca atagatgact tacaactaat cggaagggtgc 180
 agagactcga cgggagctac cctaactgta agacgagggt aaagagagag tccaattctc 240
 aaagccaata cacaacacac agtcatatac tgagtataag tataatttca g 291

<210> 300
 <211> 281
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 300
 gctatgatcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60
 ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120
 tagtaattag taagttaaca atagatgact tacaactaat cggaagggtgc agagactcga 180
 cgggagctac cctaactgta agacgagggt aaagagagag tccaattctc aaagccaata 240
 cacaacacac agtcatatac tgagtataag tataatttca g 281

<210> 301
 <211> 291
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 301
 cggatattat gctgcgatcc acggacttaa ataattgagc cttaaagaag aaattcttta 60
 agtggatgct ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc 120

caagccgaag tagtaattag taagttaaca atagatgact tacaactaat cggaagggtgc	180
agagactcga cgggagctac cctaactgtca agacgagggt aaagagagag tccaattctc	240
aaagccaata cacaacaca agtcatatac tgagtataag tataatttca g	291

<210> 302
 <211> 291
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 302	
cggtaggcgc gctgagagcc acggacttaa ataattgagc cttaaagaag aaattcttta	60
agtggatgct ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc	120
caagccgaag tagtaattag taagttaaca atagatgact tacaactaat cggaagggtgc	180
agagactcga cgggagctac cctaactgtca agacgagggt aaagagagag tccaattctc	240
aaagccaata cacaacaca agtcatatac tgagtataag tataatttca g	291

<210> 303
 <211> 230
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 303	
acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca	60
gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag	120
taagttaaca atagatgact tacaactaat cggaagggtgc agagactcga cgggagctac	180
cctaactgtcc acaaacacaa gtcataact gagtataagt ataatttcag	230

<210> 304
 <211> 240
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 304
 ctgtttaatc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60
 ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120
 tagtaattag taagttaaca atagatgact tacaactaat cggaagggtgc agagactcga 180
 cgggagctac cctaactgcc acaaacacaa gtcataact gagtataagt ataatttcag 240

<210> 305
 <211> 250
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 305
 cgtaatttat attgtgaatc acggacttaa ataattgagc cttaaagaag aaattcttta 60
 agtggatgct ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc 120
 caagccgaag tagtaattag taagttaaca atagatgact tacaactaat cggaagggtgc 180
 agagactcga cgggagctac cctaactgcc acaaacacaa gtcataact gagtataagt 240
 ataatttcag 250

<210> 306
 <211> 240
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 306
 gctatgatcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60
 ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120
 tagtaattag taagttaaca atagatgact tacaactaat cggaagggtgc agagactcga 180

cgggagctac cctaacgtcc acaaacacaa gtcataact gagtataagt ataatttcag 240

<210> 307
 <211> 250
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 307
 cggatattat gctgcatcc acggacttaa ataattgagc cttaaagaag aaattcttta 60
 agtggatgct ctcaaactca gggaaacctt aatctagtta tagacaaggc aatcctgagc 120
 caagccgaag tagtaattag taagttaaca atagatgact tacaactaat cggaagggtgc 180
 agagactcga cgggagctac cctaacgtcc acaaacacaa gtcataact gagtataagt 240
 ataatttcag 250

<210> 308
 <211> 250
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 308
 cggtaggcgc gctgcatcc acggacttaa ataattgagc cttaaagaag aaattcttta 60
 agtggatgct ctcaaactca gggaaacctt aatctagtta tagacaaggc aatcctgagc 120
 caagccgaag tagtaattag taagttaaca atagatgact tacaactaat cggaagggtgc 180
 agagactcga cgggagctac cctaacgtcc acaaacacaa gtcataact gagtataagt 240
 ataatttcag 250

<210> 309
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 309

Tyr His Ala Asp Tyr Tyr Lys Gln Arg Leu Ile His Asp Val Glu Met
1 5 10 15

Asn Pro Gly Pro
20

<210> 310

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 310

His Tyr Ala Gly Tyr Phe Ala Asp Leu Leu Ile His Asp Ile Glu Thr
1 5 10 15

Asn Pro Gly Pro
20

<210> 311

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 311

Gln Cys Thr Asn Tyr Ala Leu Leu Lys Leu Ala Gly Asp Val Glu Ser
1 5 10 15

Asn Pro Gly Pro
20

<210> 312

<211> 19

<212> PRT

<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 312
Ala Thr Asn Phe Ser Leu Leu Lys Gln Ala Gly Asp Val Glu Glu Asn
1 5 10 15

Pro Gly Pro

<210> 313
<211> 19
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 313
Ala Ala Arg Gln Met Leu Leu Leu Leu Ser Gly Asp Val Glu Thr Asn
1 5 10 15

Pro Gly Pro

<210> 314
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 314
Arg Ala Glu Gly Arg Gly Ser Leu Leu Thr Cys Gly Asp Val Glu Glu
1 5 10 15

Asn Pro Gly Pro
20

<210> 315

<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 315
Thr Arg Ala Glu Ile Glu Asp Glu Leu Ile Arg Ala Gly Ile Glu Ser
1 5 10 15

Asn Pro Gly Pro
20

<210> 316
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 316
Ala Lys Phe Gln Ile Asp Lys Ile Leu Ile Ser Gly Asp Val Glu Leu
1 5 10 15

Asn Pro Gly Pro
20

<210> 317
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 317
Ser Ser Ile Ile Arg Thr Lys Met Leu Val Ser Gly Asp Val Glu Glu
1 5 10 15

Asn Pro Gly Pro
20

<210> 318
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 318
Cys Asp Ala Gln Arg Gln Lys Leu Leu Leu Ser Gly Asp Ile Glu Gln
1 5 10 15

Asn Pro Gly Pro
20

<210> 319
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 319
Tyr Pro Ile Asp Phe Gly Gly Phe Leu Val Lys Ala Asp Ser Glu Phe
1 5 10 15

Asn Pro Gly Pro
20

<210> 320
<211> 22
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 320
Gly Ser Gly Ala Thr Asn Phe Ser Leu Leu Lys Gln Ala Gly Asp Val
1 5 10 15

Glu Glu Asn Pro Gly Pro
20

<210> 321
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 321
Gly Ser Gly Glu Gly Arg Gly Ser Leu Leu Thr Cys Gly Asp Val Glu
1 5 10 15

Glu Asn Pro Gly Pro
20

<210> 322
<211> 23
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 322
Gly Ser Gly Gln Cys Thr Asn Tyr Ala Leu Leu Lys Leu Ala Gly Asp
1 5 10 15

Val Glu Ser Asn Pro Gly Pro
20

<210> 323
<211> 25
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 323

Gly Ser Gly Val Lys Gln Thr Leu Asn Phe Asp Leu Leu Lys Leu Ala
 1 5 10 15

Gly Asp Val Glu Ser Asn Pro Gly Pro
 20 25

<210> 324
 <211> 9
 <212> PRT
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic peptide"

<220>
 <221> VARIANT
 <222> (5)..(5)
 <223> /replace="Ser"

<220>
 <221> SITE
 <222> (1)..(9)
 <223> /note="Variant residues given in the sequence have no preference with respect to those in the annotations for variant positions"

<400> 324
 Gly Asp Val Glu Glu Asn Pro Gly Pro
 1 5

<210> 325
 <211> 1273
 <212> PRT
 <213> Severe acute respiratory syndrome coronavirus 2

<400> 325
 Met Phe Val Phe Leu Val Leu Leu Pro Leu Val Ser Ser Gln Cys Val
 1 5 10 15

Asn Leu Thr Thr Arg Thr Gln Leu Pro Pro Ala Tyr Thr Asn Ser Phe
 20 25 30

Thr Arg Gly Val Tyr Tyr Pro Asp Lys Val Phe Arg Ser Ser Val Leu
 35 40 45

His Ser Thr Gln Asp Leu Phe Leu Pro Phe Phe Ser Asn Val Thr Trp
50 55 60

Phe His Ala Ile His Val Ser Gly Thr Asn Gly Thr Lys Arg Phe Asp
65 70 75 80

Asn Pro Val Leu Pro Phe Asn Asp Gly Val Tyr Phe Ala Ser Thr Glu
85 90 95

Lys Ser Asn Ile Ile Arg Gly Trp Ile Phe Gly Thr Thr Leu Asp Ser
100 105 110

Lys Thr Gln Ser Leu Leu Ile Val Asn Asn Ala Thr Asn Val Val Ile
115 120 125

Lys Val Cys Glu Phe Gln Phe Cys Asn Asp Pro Phe Leu Gly Val Tyr
130 135 140

Tyr His Lys Asn Asn Lys Ser Trp Met Glu Ser Glu Phe Arg Val Tyr
145 150 155 160

Ser Ser Ala Asn Asn Cys Thr Phe Glu Tyr Val Ser Gln Pro Phe Leu
165 170 175

Met Asp Leu Glu Gly Lys Gln Gly Asn Phe Lys Asn Leu Arg Glu Phe
180 185 190

Val Phe Lys Asn Ile Asp Gly Tyr Phe Lys Ile Tyr Ser Lys His Thr
195 200 205

Pro Ile Asn Leu Val Arg Asp Leu Pro Gln Gly Phe Ser Ala Leu Glu
210 215 220

Pro Leu Val Asp Leu Pro Ile Gly Ile Asn Ile Thr Arg Phe Gln Thr
225 230 235 240

Leu Leu Ala Leu His Arg Ser Tyr Leu Thr Pro Gly Asp Ser Ser Ser
245 250 255

Gly Trp Thr Ala Gly Ala Ala Ala Tyr Tyr Val Gly Tyr Leu Gln Pro
260 265 270

Arg Thr Phe Leu Leu Lys Tyr Asn Glu Asn Gly Thr Ile Thr Asp Ala
275 280 285

Val Asp Cys Ala Leu Asp Pro Leu Ser Glu Thr Lys Cys Thr Leu Lys
290 295 300

Ser Phe Thr Val Glu Lys Gly Ile Tyr Gln Thr Ser Asn Phe Arg Val
305 310 315 320

Gln Pro Thr Glu Ser Ile Val Arg Phe Pro Asn Ile Thr Asn Leu Cys
325 330 335

Pro Phe Gly Glu Val Phe Asn Ala Thr Arg Phe Ala Ser Val Tyr Ala
340 345 350

Trp Asn Arg Lys Arg Ile Ser Asn Cys Val Ala Asp Tyr Ser Val Leu
355 360 365

Tyr Asn Ser Ala Ser Phe Ser Thr Phe Lys Cys Tyr Gly Val Ser Pro
370 375 380

Thr Lys Leu Asn Asp Leu Cys Phe Thr Asn Val Tyr Ala Asp Ser Phe
385 390 395 400

Val Ile Arg Gly Asp Glu Val Arg Gln Ile Ala Pro Gly Gln Thr Gly
405 410 415

Lys Ile Ala Asp Tyr Asn Tyr Lys Leu Pro Asp Asp Phe Thr Gly Cys
420 425 430

Val Ile Ala Trp Asn Ser Asn Asn Leu Asp Ser Lys Val Gly Gly Asn
435 440 445

Tyr Asn Tyr Leu Tyr Arg Leu Phe Arg Lys Ser Asn Leu Lys Pro Phe
450 455 460

Glu Arg Asp Ile Ser Thr Glu Ile Tyr Gln Ala Gly Ser Thr Pro Cys
465 470 475 480

Asn Gly Val Glu Gly Phe Asn Cys Tyr Phe Pro Leu Gln Ser Tyr Gly
485 490 495

Phe Gln Pro Thr Asn Gly Val Gly Tyr Gln Pro Tyr Arg Val Val Val
500 505 510

Leu Ser Phe Glu Leu Leu His Ala Pro Ala Thr Val Cys Gly Pro Lys
515 520 525

Lys Ser Thr Asn Leu Val Lys Asn Lys Cys Val Asn Phe Asn Phe Asn
530 535 540

Gly Leu Thr Gly Thr Gly Val Leu Thr Glu Ser Asn Lys Lys Phe Leu
545 550 555 560

Pro Phe Gln Gln Phe Gly Arg Asp Ile Ala Asp Thr Thr Asp Ala Val
565 570 575

Arg Asp Pro Gln Thr Leu Glu Ile Leu Asp Ile Thr Pro Cys Ser Phe
580 585 590

Gly Gly Val Ser Val Ile Thr Pro Gly Thr Asn Thr Ser Asn Gln Val
595 600 605

Ala Val Leu Tyr Gln Asp Val Asn Cys Thr Glu Val Pro Val Ala Ile
610 615 620

His Ala Asp Gln Leu Thr Pro Thr Trp Arg Val Tyr Ser Thr Gly Ser
625 630 635 640

Asn Val Phe Gln Thr Arg Ala Gly Cys Leu Ile Gly Ala Glu His Val
645 650 655

Asn Asn Ser Tyr Glu Cys Asp Ile Pro Ile Gly Ala Gly Ile Cys Ala
660 665 670

Ser Tyr Gln Thr Gln Thr Asn Ser Pro Arg Arg Ala Arg Ser Val Ala
675 680 685

Ser Gln Ser Ile Ile Ala Tyr Thr Met Ser Leu Gly Ala Glu Asn Ser
690 695 700

Val Ala Tyr Ser Asn Asn Ser Ile Ala Ile Pro Thr Asn Phe Thr Ile
705 710 715 720

Ser Val Thr Thr Glu Ile Leu Pro Val Ser Met Thr Lys Thr Ser Val
725 730 735

Asp Cys Thr Met Tyr Ile Cys Gly Asp Ser Thr Glu Cys Ser Asn Leu
740 745 750

Leu Leu Gln Tyr Gly Ser Phe Cys Thr Gln Leu Asn Arg Ala Leu Thr
755 760 765

Gly Ile Ala Val Glu Gln Asp Lys Asn Thr Gln Glu Val Phe Ala Gln
770 775 780

Val Lys Gln Ile Tyr Lys Thr Pro Pro Ile Lys Asp Phe Gly Gly Phe
785 790 795 800

Asn Phe Ser Gln Ile Leu Pro Asp Pro Ser Lys Pro Ser Lys Arg Ser
805 810 815

Phe Ile Glu Asp Leu Leu Phe Asn Lys Val Thr Leu Ala Asp Ala Gly
820 825 830

Phe Ile Lys Gln Tyr Gly Asp Cys Leu Gly Asp Ile Ala Ala Arg Asp
835 840 845

Leu Ile Cys Ala Gln Lys Phe Asn Gly Leu Thr Val Leu Pro Pro Leu
850 855 860

Leu Thr Asp Glu Met Ile Ala Gln Tyr Thr Ser Ala Leu Leu Ala Gly
865 870 875 880

Thr Ile Thr Ser Gly Trp Thr Phe Gly Ala Gly Ala Ala Leu Gln Ile
885 890 895

Pro Phe Ala Met Gln Met Ala Tyr Arg Phe Asn Gly Ile Gly Val Thr
900 905 910

Gln Asn Val Leu Tyr Glu Asn Gln Lys Leu Ile Ala Asn Gln Phe Asn
915 920 925

Ser Ala Ile Gly Lys Ile Gln Asp Ser Leu Ser Ser Thr Ala Ser Ala
930 935 940

Leu Gly Lys Leu Gln Asp Val Val Asn Gln Asn Ala Gln Ala Leu Asn
945 950 955 960

Thr Leu Val Lys Gln Leu Ser Ser Asn Phe Gly Ala Ile Ser Ser Val
965 970 975

Leu Asn Asp Ile Leu Ser Arg Leu Asp Lys Val Glu Ala Glu Val Gln
980 985 990

Ile Asp Arg Leu Ile Thr Gly Arg Leu Gln Ser Leu Gln Thr Tyr Val
995 1000 1005

Thr Gln Gln Leu Ile Arg Ala Ala Glu Ile Arg Ala Ser Ala Asn
1010 1015 1020

Leu Ala Ala Thr Lys Met Ser Glu Cys Val Leu Gly Gln Ser Lys
1025 1030 1035

Arg Val Asp Phe Cys Gly Lys Gly Tyr His Leu Met Ser Phe Pro
1040 1045 1050

Gln Ser Ala Pro His Gly Val Val Phe Leu His Val Thr Tyr Val
1055 1060 1065

Pro Ala Gln Glu Lys Asn Phe Thr Thr Ala Pro Ala Ile Cys His
1070 1075 1080

Asp Gly Lys Ala His Phe Pro Arg Glu Gly Val Phe Val Ser Asn
1085 1090 1095

Gly Thr His Trp Phe Val Thr Gln Arg Asn Phe Tyr Glu Pro Gln
1100 1105 1110

Ile Ile Thr Thr Asp Asn Thr Phe Val Ser Gly Asn Cys Asp Val
1115 1120 1125

Val Ile Gly Ile Val Asn Asn Thr Val Tyr Asp Pro Leu Gln Pro
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Glu Leu Asp Ser Phe Lys Glu Glu Leu Asp Lys Tyr Phe Lys Asn
1145 1150 1155

His Thr Ser Pro Asp Val Asp Leu Gly Asp Ile Ser Gly Ile Asn
1160 1165 1170

Ala Ser Val Val Asn Ile Gln Lys Glu Ile Asp Arg Leu Asn Glu
1175 1180 1185

Val Ala Lys Asn Leu Asn Glu Ser Leu Ile Asp Leu Gln Glu Leu
1190 1195 1200

Gly Lys Tyr Glu Gln Tyr Ile Lys Trp Pro Trp Tyr Ile Trp Leu
1205 1210 1215

Gly Phe Ile Ala Gly Leu Ile Ala Ile Val Met Val Thr Ile Met
1220 1225 1230

Leu Cys Cys Met Thr Ser Cys Cys Ser Cys Leu Lys Gly Cys Cys
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Ser Cys Gly Ser Cys Cys Lys Phe Asp Glu Asp Asp Ser Glu Pro
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Val Leu Lys Gly Val Lys Leu His Tyr Thr
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<211> 7096

<212> PRT

<213> Severe acute respiratory syndrome coronavirus 2

<400> 326

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Ser Leu Pro Val Leu Gln Val Arg Asp Val Leu Val Arg Gly Phe Gly
20 25 30

Asp Ser Val Glu Glu Val Leu Ser Glu Ala Arg Gln His Leu Lys Asp
35 40 45

Gly Thr Cys Gly Leu Val Glu Val Glu Lys Gly Val Leu Pro Gln Leu
50 55 60

Glu Gln Pro Tyr Val Phe Ile Lys Arg Ser Asp Ala Arg Thr Ala Pro
65 70 75 80

His Gly His Val Met Val Glu Leu Val Ala Glu Leu Glu Gly Ile Gln
85 90 95

Tyr Gly Arg Ser Gly Glu Thr Leu Gly Val Leu Val Pro His Val Gly
100 105 110

Glu Ile Pro Val Ala Tyr Arg Lys Val Leu Leu Arg Lys Asn Gly Asn
115 120 125

Lys Gly Ala Gly Gly His Ser Tyr Gly Ala Asp Leu Lys Ser Phe Asp
130 135 140

Leu Gly Asp Glu Leu Gly Thr Asp Pro Tyr Glu Asp Phe Gln Glu Asn
145 150 155 160

Trp Asn Thr Lys His Ser Ser Gly Val Thr Arg Glu Leu Met Arg Glu
165 170 175

Leu Asn Gly Gly Ala Tyr Thr Arg Tyr Val Asp Asn Asn Phe Cys Gly
180 185 190

Pro Asp Gly Tyr Pro Leu Glu Cys Ile Lys Asp Leu Leu Ala Arg Ala
195 200 205

Gly Lys Ala Ser Cys Thr Leu Ser Glu Gln Leu Asp Phe Ile Asp Thr
210 215 220

Lys Arg Gly Val Tyr Cys Cys Arg Glu His Glu His Glu Ile Ala Trp
225 230 235 240

Tyr Thr Glu Arg Ser Glu Lys Ser Tyr Glu Leu Gln Thr Pro Phe Glu
245 250 255

Ile Lys Leu Ala Lys Lys Phe Asp Thr Phe Asn Gly Glu Cys Pro Asn
260 265 270

Phe Val Phe Pro Leu Asn Ser Ile Ile Lys Thr Ile Gln Pro Arg Val
275 280 285

Glu Lys Lys Lys Leu Asp Gly Phe Met Gly Arg Ile Arg Ser Val Tyr
290 295 300

Pro Val Ala Ser Pro Asn Glu Cys Asn Gln Met Cys Leu Ser Thr Leu
305 310 315 320

Met Lys Cys Asp His Cys Gly Glu Thr Ser Trp Gln Thr Gly Asp Phe
325 330 335

Val Lys Ala Thr Cys Glu Phe Cys Gly Thr Glu Asn Leu Thr Lys Glu
340 345 350

Gly Ala Thr Thr Cys Gly Tyr Leu Pro Gln Asn Ala Val Val Lys Ile
355 360 365

Tyr Cys Pro Ala Cys His Asn Ser Glu Val Gly Pro Glu His Ser Leu
370 375 380

Ala Glu Tyr His Asn Glu Ser Gly Leu Lys Thr Ile Leu Arg Lys Gly
385 390 395 400

Gly Arg Thr Ile Ala Phe Gly Gly Cys Val Phe Ser Tyr Val Gly Cys
405 410 415

His Asn Lys Cys Ala Tyr Trp Val Pro Arg Ala Ser Ala Asn Ile Gly
420 425 430

Cys Asn His Thr Gly Val Val Gly Glu Gly Ser Glu Gly Leu Asn Asp
435 440 445

Asn Leu Leu Glu Ile Leu Gln Lys Glu Lys Val Asn Ile Asn Ile Val
450 455 460

Gly Asp Phe Lys Leu Asn Glu Glu Ile Ala Ile Ile Leu Ala Ser Phe
465 470 475 480

Ser Ala Ser Thr Ser Ala Phe Val Glu Thr Val Lys Gly Leu Asp Tyr
485 490 495

Lys Ala Phe Lys Gln Ile Val Glu Ser Cys Gly Asn Phe Lys Val Thr
500 505 510

Lys Gly Lys Ala Lys Lys Gly Ala Trp Asn Ile Gly Glu Gln Lys Ser
515 520 525

Ile Leu Ser Pro Leu Tyr Ala Phe Ala Ser Glu Ala Ala Arg Val Val
530 535 540

Arg Ser Ile Phe Ser Arg Thr Leu Glu Thr Ala Gln Asn Ser Val Arg
545 550 555 560

Val Leu Gln Lys Ala Ala Ile Thr Ile Leu Asp Gly Ile Ser Gln Tyr
565 570 575

Ser Leu Arg Leu Ile Asp Ala Met Met Phe Thr Ser Asp Leu Ala Thr
580 585 590

Asn Asn Leu Val Val Met Ala Tyr Ile Thr Gly Gly Val Val Gln Leu
595 600 605

Thr Ser Gln Trp Leu Thr Asn Ile Phe Gly Thr Val Tyr Glu Lys Leu
610 615 620

Lys Pro Val Leu Asp Trp Leu Glu Glu Lys Phe Lys Glu Gly Val Glu
625 630 635 640

Phe Leu Arg Asp Gly Trp Glu Ile Val Lys Phe Ile Ser Thr Cys Ala
645 650 655

Cys Glu Ile Val Gly Gly Gln Ile Val Thr Cys Ala Lys Glu Ile Lys
660 665 670

Glu Ser Val Gln Thr Phe Phe Lys Leu Val Asn Lys Phe Leu Ala Leu
675 680 685

Cys Ala Asp Ser Ile Ile Ile Gly Gly Ala Lys Leu Lys Ala Leu Asn
690 695 700

Leu Gly Glu Thr Phe Val Thr His Ser Lys Gly Leu Tyr Arg Lys Cys
705 710 715 720

Val Lys Ser Arg Glu Glu Thr Gly Leu Leu Met Pro Leu Lys Ala Pro
725 730 735

Lys Glu Ile Ile Phe Leu Glu Gly Glu Thr Leu Pro Thr Glu Val Leu
740 745 750

Thr Glu Glu Val Val Leu Lys Thr Gly Asp Leu Gln Pro Leu Glu Gln
755 760 765

Pro Thr Ser Glu Ala Val Glu Ala Pro Leu Val Gly Thr Pro Val Cys
770 775 780

Ile Asn Gly Leu Met Leu Leu Glu Ile Lys Asp Thr Glu Lys Tyr Cys
785 790 795 800

Ala Leu Ala Pro Asn Met Met Val Thr Asn Asn Thr Phe Thr Leu Lys
805 810 815

Gly Gly Ala Pro Thr Lys Val Thr Phe Gly Asp Asp Thr Val Ile Glu
820 825 830

Val Gln Gly Tyr Lys Ser Val Asn Ile Thr Phe Glu Leu Asp Glu Arg
835 840 845

Ile Asp Lys Val Leu Asn Glu Lys Cys Ser Ala Tyr Thr Val Glu Leu
850 855 860

Gly Thr Glu Val Asn Glu Phe Ala Cys Val Val Ala Asp Ala Val Ile
865 870 875 880

Lys Thr Leu Gln Pro Val Ser Glu Leu Leu Thr Pro Leu Gly Ile Asp
885 890 895

Leu Asp Glu Trp Ser Met Ala Thr Tyr Tyr Leu Phe Asp Glu Ser Gly
 900 905 910

Glu Phe Lys Leu Ala Ser His Met Tyr Cys Ser Phe Tyr Pro Pro Asp
 915 920 925

Glu Asp Glu Glu Glu Gly Asp Cys Glu Glu Glu Glu Phe Glu Pro Ser
 930 935 940

Thr Gln Tyr Glu Tyr Gly Thr Glu Asp Asp Tyr Gln Gly Lys Pro Leu
 945 950 955 960

Glu Phe Gly Ala Thr Ser Ala Ala Leu Gln Pro Glu Glu Glu Gln Glu
 965 970 975

Glu Asp Trp Leu Asp Asp Asp Ser Gln Gln Thr Val Gly Gln Gln Asp
 980 985 990

Gly Ser Glu Asp Asn Gln Thr Thr Thr Ile Gln Thr Ile Val Glu Val
 995 1000 1005

Gln Pro Gln Leu Glu Met Glu Leu Thr Pro Val Val Gln Thr Ile
 1010 1015 1020

Glu Val Asn Ser Phe Ser Gly Tyr Leu Lys Leu Thr Asp Asn Val
 1025 1030 1035

Tyr Ile Lys Asn Ala Asp Ile Val Glu Glu Ala Lys Lys Val Lys
 1040 1045 1050

Pro Thr Val Val Val Asn Ala Ala Asn Val Tyr Leu Lys His Gly
 1055 1060 1065

Gly Gly Val Ala Gly Ala Leu Asn Lys Ala Thr Asn Asn Ala Met
 1070 1075 1080

Gln Val Glu Ser Asp Asp Tyr Ile Ala Thr Asn Gly Pro Leu Lys
 1085 1090 1095

Val	Gly	Gly	Ser	Cys	Val	Leu	Ser	Gly	His	Asn	Leu	Ala	Lys	His
1100						1105					1110			
Cys	Leu	His	Val	Val	Gly	Pro	Asn	Val	Asn	Lys	Gly	Glu	Asp	Ile
1115						1120					1125			
Gln	Leu	Leu	Lys	Ser	Ala	Tyr	Glu	Asn	Phe	Asn	Gln	His	Glu	Val
1130						1135					1140			
Leu	Leu	Ala	Pro	Leu	Leu	Ser	Ala	Gly	Ile	Phe	Gly	Ala	Asp	Pro
1145						1150					1155			
Ile	His	Ser	Leu	Arg	Val	Cys	Val	Asp	Thr	Val	Arg	Thr	Asn	Val
1160						1165					1170			
Tyr	Leu	Ala	Val	Phe	Asp	Lys	Asn	Leu	Tyr	Asp	Lys	Leu	Val	Ser
1175						1180					1185			
Ser	Phe	Leu	Glu	Met	Lys	Ser	Glu	Lys	Gln	Val	Glu	Gln	Lys	Ile
1190						1195					1200			
Ala	Glu	Ile	Pro	Lys	Glu	Glu	Val	Lys	Pro	Phe	Ile	Thr	Glu	Ser
1205						1210					1215			
Lys	Pro	Ser	Val	Glu	Gln	Arg	Lys	Gln	Asp	Asp	Lys	Lys	Ile	Lys
1220						1225					1230			
Ala	Cys	Val	Glu	Glu	Val	Thr	Thr	Thr	Leu	Glu	Glu	Thr	Lys	Phe
1235						1240					1245			
Leu	Thr	Glu	Asn	Leu	Leu	Leu	Tyr	Ile	Asp	Ile	Asn	Gly	Asn	Leu
1250						1255					1260			
His	Pro	Asp	Ser	Ala	Thr	Leu	Val	Ser	Asp	Ile	Asp	Ile	Thr	Phe
1265						1270					1275			
Leu	Lys	Lys	Asp	Ala	Pro	Tyr	Ile	Val	Gly	Asp	Val	Val	Gln	Glu
1280						1285					1290			
Gly	Val	Leu	Thr	Ala	Val	Val	Ile	Pro	Thr	Lys	Lys	Ala	Gly	Gly
1295						1300					1305			

Thr	Thr	Glu	Met	Leu	Ala	Lys	Ala	Leu	Arg	Lys	Val	Pro	Thr	Asp
1310						1315					1320			
Asn	Tyr	Ile	Thr	Thr	Tyr	Pro	Gly	Gln	Gly	Leu	Asn	Gly	Tyr	Thr
1325						1330					1335			
Val	Glu	Glu	Ala	Lys	Thr	Val	Leu	Lys	Lys	Cys	Lys	Ser	Ala	Phe
1340						1345					1350			
Tyr	Ile	Leu	Pro	Ser	Ile	Ile	Ser	Asn	Glu	Lys	Gln	Glu	Ile	Leu
1355						1360					1365			
Gly	Thr	Val	Ser	Trp	Asn	Leu	Arg	Glu	Met	Leu	Ala	His	Ala	Glu
1370						1375					1380			
Glu	Thr	Arg	Lys	Leu	Met	Pro	Val	Cys	Val	Glu	Thr	Lys	Ala	Ile
1385						1390					1395			
Val	Ser	Thr	Ile	Gln	Arg	Lys	Tyr	Lys	Gly	Ile	Lys	Ile	Gln	Glu
1400						1405					1410			
Gly	Val	Val	Asp	Tyr	Gly	Ala	Arg	Phe	Tyr	Phe	Tyr	Thr	Ser	Lys
1415						1420					1425			
Thr	Thr	Val	Ala	Ser	Leu	Ile	Asn	Thr	Leu	Asn	Asp	Leu	Asn	Glu
1430						1435					1440			
Thr	Leu	Val	Thr	Met	Pro	Leu	Gly	Tyr	Val	Thr	His	Gly	Leu	Asn
1445						1450					1455			
Leu	Glu	Glu	Ala	Ala	Arg	Tyr	Met	Arg	Ser	Leu	Lys	Val	Pro	Ala
1460						1465					1470			
Thr	Val	Ser	Val	Ser	Ser	Pro	Asp	Ala	Val	Thr	Ala	Tyr	Asn	Gly
1475						1480					1485			
Tyr	Leu	Thr	Ser	Ser	Ser	Lys	Thr	Pro	Glu	Glu	His	Phe	Ile	Glu
1490						1495					1500			

Thr	Ile	Ser	Leu	Ala	Gly	Ser	Tyr	Lys	Asp	Trp	Ser	Tyr	Ser	Gly
1505						1510					1515			
Gln	Ser	Thr	Gln	Leu	Gly	Ile	Glu	Phe	Leu	Lys	Arg	Gly	Asp	Lys
1520						1525					1530			
Ser	Val	Tyr	Tyr	Thr	Ser	Asn	Pro	Thr	Thr	Phe	His	Leu	Asp	Gly
1535						1540					1545			
Glu	Val	Ile	Thr	Phe	Asp	Asn	Leu	Lys	Thr	Leu	Leu	Ser	Leu	Arg
1550						1555					1560			
Glu	Val	Arg	Thr	Ile	Lys	Val	Phe	Thr	Thr	Val	Asp	Asn	Ile	Asn
1565						1570					1575			
Leu	His	Thr	Gln	Val	Val	Asp	Met	Ser	Met	Thr	Tyr	Gly	Gln	Gln
1580						1585					1590			
Phe	Gly	Pro	Thr	Tyr	Leu	Asp	Gly	Ala	Asp	Val	Thr	Lys	Ile	Lys
1595						1600					1605			
Pro	His	Asn	Ser	His	Glu	Gly	Lys	Thr	Phe	Tyr	Val	Leu	Pro	Asn
1610						1615					1620			
Asp	Asp	Thr	Leu	Arg	Val	Glu	Ala	Phe	Glu	Tyr	Tyr	His	Thr	Thr
1625						1630					1635			
Asp	Pro	Ser	Phe	Leu	Gly	Arg	Tyr	Met	Ser	Ala	Leu	Asn	His	Thr
1640						1645					1650			
Lys	Lys	Trp	Lys	Tyr	Pro	Gln	Val	Asn	Gly	Leu	Thr	Ser	Ile	Lys
1655						1660					1665			
Trp	Ala	Asp	Asn	Asn	Cys	Tyr	Leu	Ala	Thr	Ala	Leu	Leu	Thr	Leu
1670						1675					1680			
Gln	Gln	Ile	Glu	Leu	Lys	Phe	Asn	Pro	Pro	Ala	Leu	Gln	Asp	Ala
1685						1690					1695			
Tyr	Tyr	Arg	Ala	Arg	Ala	Gly	Glu	Ala	Ala	Asn	Phe	Cys	Ala	Leu
1700						1705					1710			

Ile	Leu	Ala	Tyr	Cys	Asn	Lys	Thr	Val	Gly	Glu	Leu	Gly	Asp	Val
1715						1720					1725			
Arg	Glu	Thr	Met	Ser	Tyr	Leu	Phe	Gln	His	Ala	Asn	Leu	Asp	Ser
1730						1735					1740			
Cys	Lys	Arg	Val	Leu	Asn	Val	Val	Cys	Lys	Thr	Cys	Gly	Gln	Gln
1745						1750					1755			
Gln	Thr	Thr	Leu	Lys	Gly	Val	Glu	Ala	Val	Met	Tyr	Met	Gly	Thr
1760						1765					1770			
Leu	Ser	Tyr	Glu	Gln	Phe	Lys	Lys	Gly	Val	Gln	Ile	Pro	Cys	Thr
1775						1780					1785			
Cys	Gly	Lys	Gln	Ala	Thr	Lys	Tyr	Leu	Val	Gln	Gln	Glu	Ser	Pro
1790						1795					1800			
Phe	Val	Met	Met	Ser	Ala	Pro	Pro	Ala	Gln	Tyr	Glu	Leu	Lys	His
1805						1810					1815			
Gly	Thr	Phe	Thr	Cys	Ala	Ser	Glu	Tyr	Thr	Gly	Asn	Tyr	Gln	Cys
1820						1825					1830			
Gly	His	Tyr	Lys	His	Ile	Thr	Ser	Lys	Glu	Thr	Leu	Tyr	Cys	Ile
1835						1840					1845			
Asp	Gly	Ala	Leu	Leu	Thr	Lys	Ser	Ser	Glu	Tyr	Lys	Gly	Pro	Ile
1850						1855					1860			
Thr	Asp	Val	Phe	Tyr	Lys	Glu	Asn	Ser	Tyr	Thr	Thr	Thr	Ile	Lys
1865						1870					1875			
Pro	Val	Thr	Tyr	Lys	Leu	Asp	Gly	Val	Val	Cys	Thr	Glu	Ile	Asp
1880						1885					1890			
Pro	Lys	Leu	Asp	Asn	Tyr	Tyr	Lys	Lys	Asp	Asn	Ser	Tyr	Phe	Thr
1895						1900					1905			

Glu 1910	Gln	Pro	Ile	Asp	Leu	Val 1915	Pro	Asn	Gln	Pro	Tyr 1920	Pro	Asn	Ala
Ser 1925	Phe	Asp	Asn	Phe	Lys	Phe 1930	Val	Cys	Asp	Asn	Ile 1935	Lys	Phe	Ala
Asp 1940	Asp	Leu	Asn	Gln	Leu	Thr 1945	Gly	Tyr	Lys	Lys	Pro 1950	Ala	Ser	Arg
Glu 1955	Leu	Lys	Val	Thr	Phe	Phe 1960	Pro	Asp	Leu	Asn	Gly 1965	Asp	Val	Val
Ala 1970	Ile	Asp	Tyr	Lys	His	Tyr 1975	Thr	Pro	Ser	Phe	Lys 1980	Lys	Gly	Ala
Lys 1985	Leu	Leu	His	Lys	Pro	Ile 1990	Val	Trp	His	Val	Asn 1995	Asn	Ala	Thr
Asn 2000	Lys	Ala	Thr	Tyr	Lys	Pro 2005	Asn	Thr	Trp	Cys	Ile 2010	Arg	Cys	Leu
Trp 2015	Ser	Thr	Lys	Pro	Val	Glu 2020	Thr	Ser	Asn	Ser	Phe 2025	Asp	Val	Leu
Lys 2030	Ser	Glu	Asp	Ala	Gln	Gly 2035	Met	Asp	Asn	Leu	Ala 2040	Cys	Glu	Asp
Leu 2045	Lys	Pro	Val	Ser	Glu	Glu 2050	Val	Val	Glu	Asn	Pro 2055	Thr	Ile	Gln
Lys 2060	Asp	Val	Leu	Glu	Cys	Asn 2065	Val	Lys	Thr	Thr	Glu 2070	Val	Val	Gly
Asp 2075	Ile	Ile	Leu	Lys	Pro	Ala 2080	Asn	Asn	Ser	Leu	Lys 2085	Ile	Thr	Glu
Glu 2090	Val	Gly	His	Thr	Asp	Leu 2095	Met	Ala	Ala	Tyr	Val 2100	Asp	Asn	Ser
Ser 2105	Leu	Thr	Ile	Lys	Lys	Pro 2110	Asn	Glu	Leu	Ser	Arg 2115	Val	Leu	Gly

Leu	Lys	Thr	Leu	Ala	Thr	His	Gly	Leu	Ala	Ala	Val	Asn	Ser	Val
2120						2125					2130			
Pro	Trp	Asp	Thr	Ile	Ala	Asn	Tyr	Ala	Lys	Pro	Phe	Leu	Asn	Lys
2135						2140					2145			
Val	Val	Ser	Thr	Thr	Thr	Asn	Ile	Val	Thr	Arg	Cys	Leu	Asn	Arg
2150						2155					2160			
Val	Cys	Thr	Asn	Tyr	Met	Pro	Tyr	Phe	Phe	Thr	Leu	Leu	Leu	Gln
2165						2170					2175			
Leu	Cys	Thr	Phe	Thr	Arg	Ser	Thr	Asn	Ser	Arg	Ile	Lys	Ala	Ser
2180						2185					2190			
Met	Pro	Thr	Thr	Ile	Ala	Lys	Asn	Thr	Val	Lys	Ser	Val	Gly	Lys
2195						2200					2205			
Phe	Cys	Leu	Glu	Ala	Ser	Phe	Asn	Tyr	Leu	Lys	Ser	Pro	Asn	Phe
2210						2215					2220			
Ser	Lys	Leu	Ile	Asn	Ile	Ile	Ile	Trp	Phe	Leu	Leu	Leu	Ser	Val
2225						2230					2235			
Cys	Leu	Gly	Ser	Leu	Ile	Tyr	Ser	Thr	Ala	Ala	Leu	Gly	Val	Leu
2240						2245					2250			
Met	Ser	Asn	Leu	Gly	Met	Pro	Ser	Tyr	Cys	Thr	Gly	Tyr	Arg	Glu
2255						2260					2265			
Gly	Tyr	Leu	Asn	Ser	Thr	Asn	Val	Thr	Ile	Ala	Thr	Tyr	Cys	Thr
2270						2275					2280			
Gly	Ser	Ile	Pro	Cys	Ser	Val	Cys	Leu	Ser	Gly	Leu	Asp	Ser	Leu
2285						2290					2295			
Asp	Thr	Tyr	Pro	Ser	Leu	Glu	Thr	Ile	Gln	Ile	Thr	Ile	Ser	Ser
2300						2305					2310			

Phe	Lys	Trp	Asp	Leu	Thr	Ala	Phe	Gly	Leu	Val	Ala	Glu	Trp	Phe
2315						2320					2325			
Leu	Ala	Tyr	Ile	Leu	Phe	Thr	Arg	Phe	Phe	Tyr	Val	Leu	Gly	Leu
2330						2335					2340			
Ala	Ala	Ile	Met	Gln	Leu	Phe	Phe	Ser	Tyr	Phe	Ala	Val	His	Phe
2345						2350					2355			
Ile	Ser	Asn	Ser	Trp	Leu	Met	Trp	Leu	Ile	Ile	Asn	Leu	Val	Gln
2360						2365					2370			
Met	Ala	Pro	Ile	Ser	Ala	Met	Val	Arg	Met	Tyr	Ile	Phe	Phe	Ala
2375						2380					2385			
Ser	Phe	Tyr	Tyr	Val	Trp	Lys	Ser	Tyr	Val	His	Val	Val	Asp	Gly
2390						2395					2400			
Cys	Asn	Ser	Ser	Thr	Cys	Met	Met	Cys	Tyr	Lys	Arg	Asn	Arg	Ala
2405						2410					2415			
Thr	Arg	Val	Glu	Cys	Thr	Thr	Ile	Val	Asn	Gly	Val	Arg	Arg	Ser
2420						2425					2430			
Phe	Tyr	Val	Tyr	Ala	Asn	Gly	Gly	Lys	Gly	Phe	Cys	Lys	Leu	His
2435						2440					2445			
Asn	Trp	Asn	Cys	Val	Asn	Cys	Asp	Thr	Phe	Cys	Ala	Gly	Ser	Thr
2450						2455					2460			
Phe	Ile	Ser	Asp	Glu	Val	Ala	Arg	Asp	Leu	Ser	Leu	Gln	Phe	Lys
2465						2470					2475			
Arg	Pro	Ile	Asn	Pro	Thr	Asp	Gln	Ser	Ser	Tyr	Ile	Val	Asp	Ser
2480						2485					2490			
Val	Thr	Val	Lys	Asn	Gly	Ser	Ile	His	Leu	Tyr	Phe	Asp	Lys	Ala
2495						2500					2505			
Gly	Gln	Lys	Thr	Tyr	Glu	Arg	His	Ser	Leu	Ser	His	Phe	Val	Asn
2510						2515					2520			

Leu	Asp	Asn	Leu	Arg	Ala	Asn	Asn	Thr	Lys	Gly	Ser	Leu	Pro	Ile
2525						2530					2535			
Asn	Val	Ile	Val	Phe	Asp	Gly	Lys	Ser	Lys	Cys	Glu	Glu	Ser	Ser
2540						2545					2550			
Ala	Lys	Ser	Ala	Ser	Val	Tyr	Tyr	Ser	Gln	Leu	Met	Cys	Gln	Pro
2555						2560					2565			
Ile	Leu	Leu	Leu	Asp	Gln	Ala	Leu	Val	Ser	Asp	Val	Gly	Asp	Ser
2570						2575					2580			
Ala	Glu	Val	Ala	Val	Lys	Met	Phe	Asp	Ala	Tyr	Val	Asn	Thr	Phe
2585						2590					2595			
Ser	Ser	Thr	Phe	Asn	Val	Pro	Met	Glu	Lys	Leu	Lys	Thr	Leu	Val
2600						2605					2610			
Ala	Thr	Ala	Glu	Ala	Glu	Leu	Ala	Lys	Asn	Val	Ser	Leu	Asp	Asn
2615						2620					2625			
Val	Leu	Ser	Thr	Phe	Ile	Ser	Ala	Ala	Arg	Gln	Gly	Phe	Val	Asp
2630						2635					2640			
Ser	Asp	Val	Glu	Thr	Lys	Asp	Val	Val	Glu	Cys	Leu	Lys	Leu	Ser
2645						2650					2655			
His	Gln	Ser	Asp	Ile	Glu	Val	Thr	Gly	Asp	Ser	Cys	Asn	Asn	Tyr
2660						2665					2670			
Met	Leu	Thr	Tyr	Asn	Lys	Val	Glu	Asn	Met	Thr	Pro	Arg	Asp	Leu
2675						2680					2685			
Gly	Ala	Cys	Ile	Asp	Cys	Ser	Ala	Arg	His	Ile	Asn	Ala	Gln	Val
2690						2695					2700			
Ala	Lys	Ser	His	Asn	Ile	Ala	Leu	Ile	Trp	Asn	Val	Lys	Asp	Phe
2705						2710					2715			

Met	Ser	Leu	Ser	Glu	Gln	Leu	Arg	Lys	Gln	Ile	Arg	Ser	Ala	Ala
2720						2725					2730			
Lys	Lys	Asn	Asn	Leu	Pro	Phe	Lys	Leu	Thr	Cys	Ala	Thr	Thr	Arg
2735						2740					2745			
Gln	Val	Val	Asn	Val	Val	Thr	Thr	Lys	Ile	Ala	Leu	Lys	Gly	Gly
2750						2755					2760			
Lys	Ile	Val	Asn	Asn	Trp	Leu	Lys	Gln	Leu	Ile	Lys	Val	Thr	Leu
2765						2770					2775			
Val	Phe	Leu	Phe	Val	Ala	Ala	Ile	Phe	Tyr	Leu	Ile	Thr	Pro	Val
2780						2785					2790			
His	Val	Met	Ser	Lys	His	Thr	Asp	Phe	Ser	Ser	Glu	Ile	Ile	Gly
2795						2800					2805			
Tyr	Lys	Ala	Ile	Asp	Gly	Gly	Val	Thr	Arg	Asp	Ile	Ala	Ser	Thr
2810						2815					2820			
Asp	Thr	Cys	Phe	Ala	Asn	Lys	His	Ala	Asp	Phe	Asp	Thr	Trp	Phe
2825						2830					2835			
Ser	Gln	Arg	Gly	Gly	Ser	Tyr	Thr	Asn	Asp	Lys	Ala	Cys	Pro	Leu
2840						2845					2850			
Ile	Ala	Ala	Val	Ile	Thr	Arg	Glu	Val	Gly	Phe	Val	Val	Pro	Gly
2855						2860					2865			
Leu	Pro	Gly	Thr	Ile	Leu	Arg	Thr	Thr	Asn	Gly	Asp	Phe	Leu	His
2870						2875					2880			
Phe	Leu	Pro	Arg	Val	Phe	Ser	Ala	Val	Gly	Asn	Ile	Cys	Tyr	Thr
2885						2890					2895			
Pro	Ser	Lys	Leu	Ile	Glu	Tyr	Thr	Asp	Phe	Ala	Thr	Ser	Ala	Cys
2900						2905					2910			
Val	Leu	Ala	Ala	Glu	Cys	Thr	Ile	Phe	Lys	Asp	Ala	Ser	Gly	Lys
2915						2920					2925			

Pro	Val	Pro	Tyr	Cys	Tyr	Asp	Thr	Asn	Val	Leu	Glu	Gly	Ser	Val
2930						2935					2940			
Ala	Tyr	Glu	Ser	Leu	Arg	Pro	Asp	Thr	Arg	Tyr	Val	Leu	Met	Asp
2945						2950					2955			
Gly	Ser	Ile	Ile	Gln	Phe	Pro	Asn	Thr	Tyr	Leu	Glu	Gly	Ser	Val
2960						2965					2970			
Arg	Val	Val	Thr	Thr	Phe	Asp	Ser	Glu	Tyr	Cys	Arg	His	Gly	Thr
2975						2980					2985			
Cys	Glu	Arg	Ser	Glu	Ala	Gly	Val	Cys	Val	Ser	Thr	Ser	Gly	Arg
2990						2995					3000			
Trp	Val	Leu	Asn	Asn	Asp	Tyr	Tyr	Arg	Ser	Leu	Pro	Gly	Val	Phe
3005						3010					3015			
Cys	Gly	Val	Asp	Ala	Val	Asn	Leu	Leu	Thr	Asn	Met	Phe	Thr	Pro
3020						3025					3030			
Leu	Ile	Gln	Pro	Ile	Gly	Ala	Leu	Asp	Ile	Ser	Ala	Ser	Ile	Val
3035						3040					3045			
Ala	Gly	Gly	Ile	Val	Ala	Ile	Val	Val	Thr	Cys	Leu	Ala	Tyr	Tyr
3050						3055					3060			
Phe	Met	Arg	Phe	Arg	Arg	Ala	Phe	Gly	Glu	Tyr	Ser	His	Val	Val
3065						3070					3075			
Ala	Phe	Asn	Thr	Leu	Leu	Phe	Leu	Met	Ser	Phe	Thr	Val	Leu	Cys
3080						3085					3090			
Leu	Thr	Pro	Val	Tyr	Ser	Phe	Leu	Pro	Gly	Val	Tyr	Ser	Val	Ile
3095						3100					3105			
Tyr	Leu	Tyr	Leu	Thr	Phe	Tyr	Leu	Thr	Asn	Asp	Val	Ser	Phe	Leu
3110						3115					3120			

Ala	His	Ile	Gln	Trp	Met	Val	Met	Phe	Thr	Pro	Leu	Val	Pro	Phe
3125						3130					3135			
Trp	Ile	Thr	Ile	Ala	Tyr	Ile	Ile	Cys	Ile	Ser	Thr	Lys	His	Phe
3140						3145					3150			
Tyr	Trp	Phe	Phe	Ser	Asn	Tyr	Leu	Lys	Arg	Arg	Val	Val	Phe	Asn
3155						3160					3165			
Gly	Val	Ser	Phe	Ser	Thr	Phe	Glu	Glu	Ala	Ala	Leu	Cys	Thr	Phe
3170						3175					3180			
Leu	Leu	Asn	Lys	Glu	Met	Tyr	Leu	Lys	Leu	Arg	Ser	Asp	Val	Leu
3185						3190					3195			
Leu	Pro	Leu	Thr	Gln	Tyr	Asn	Arg	Tyr	Leu	Ala	Leu	Tyr	Asn	Lys
3200						3205					3210			
Tyr	Lys	Tyr	Phe	Ser	Gly	Ala	Met	Asp	Thr	Thr	Ser	Tyr	Arg	Glu
3215						3220					3225			
Ala	Ala	Cys	Cys	His	Leu	Ala	Lys	Ala	Leu	Asn	Asp	Phe	Ser	Asn
3230						3235					3240			
Ser	Gly	Ser	Asp	Val	Leu	Tyr	Gln	Pro	Pro	Gln	Thr	Ser	Ile	Thr
3245						3250					3255			
Ser	Ala	Val	Leu	Gln	Ser	Gly	Phe	Arg	Lys	Met	Ala	Phe	Pro	Ser
3260						3265					3270			
Gly	Lys	Val	Glu	Gly	Cys	Met	Val	Gln	Val	Thr	Cys	Gly	Thr	Thr
3275						3280					3285			
Thr	Leu	Asn	Gly	Leu	Trp	Leu	Asp	Asp	Val	Val	Tyr	Cys	Pro	Arg
3290						3295					3300			
His	Val	Ile	Cys	Thr	Ser	Glu	Asp	Met	Leu	Asn	Pro	Asn	Tyr	Glu
3305						3310					3315			
Asp	Leu	Leu	Ile	Arg	Lys	Ser	Asn	His	Asn	Phe	Leu	Val	Gln	Ala
3320						3325					3330			

Gly	Asn	Val	Gln	Leu	Arg	Val	Ile	Gly	His	Ser	Met	Gln	Asn	Cys
3335						3340					3345			
Val	Leu	Lys	Leu	Lys	Val	Asp	Thr	Ala	Asn	Pro	Lys	Thr	Pro	Lys
3350						3355					3360			
Tyr	Lys	Phe	Val	Arg	Ile	Gln	Pro	Gly	Gln	Thr	Phe	Ser	Val	Leu
3365						3370					3375			
Ala	Cys	Tyr	Asn	Gly	Ser	Pro	Ser	Gly	Val	Tyr	Gln	Cys	Ala	Met
3380						3385					3390			
Arg	Pro	Asn	Phe	Thr	Ile	Lys	Gly	Ser	Phe	Leu	Asn	Gly	Ser	Cys
3395						3400					3405			
Gly	Ser	Val	Gly	Phe	Asn	Ile	Asp	Tyr	Asp	Cys	Val	Ser	Phe	Cys
3410						3415					3420			
Tyr	Met	His	His	Met	Glu	Leu	Pro	Thr	Gly	Val	His	Ala	Gly	Thr
3425						3430					3435			
Asp	Leu	Glu	Gly	Asn	Phe	Tyr	Gly	Pro	Phe	Val	Asp	Arg	Gln	Thr
3440						3445					3450			
Ala	Gln	Ala	Ala	Gly	Thr	Asp	Thr	Thr	Ile	Thr	Val	Asn	Val	Leu
3455						3460					3465			
Ala	Trp	Leu	Tyr	Ala	Ala	Val	Ile	Asn	Gly	Asp	Arg	Trp	Phe	Leu
3470						3475					3480			
Asn	Arg	Phe	Thr	Thr	Thr	Leu	Asn	Asp	Phe	Asn	Leu	Val	Ala	Met
3485						3490					3495			
Lys	Tyr	Asn	Tyr	Glu	Pro	Leu	Thr	Gln	Asp	His	Val	Asp	Ile	Leu
3500						3505					3510			
Gly	Pro	Leu	Ser	Ala	Gln	Thr	Gly	Ile	Ala	Val	Leu	Asp	Met	Cys
3515						3520					3525			

Ala	Ser	Leu	Lys	Glu	Leu	Leu	Gln	Asn	Gly	Met	Asn	Gly	Arg	Thr
3530						3535					3540			
Ile	Leu	Gly	Ser	Ala	Leu	Leu	Glu	Asp	Glu	Phe	Thr	Pro	Phe	Asp
3545						3550					3555			
Val	Val	Arg	Gln	Cys	Ser	Gly	Val	Thr	Phe	Gln	Ser	Ala	Val	Lys
3560						3565					3570			
Arg	Thr	Ile	Lys	Gly	Thr	His	His	Trp	Leu	Leu	Leu	Thr	Ile	Leu
3575						3580					3585			
Thr	Ser	Leu	Leu	Val	Leu	Val	Gln	Ser	Thr	Gln	Trp	Ser	Leu	Phe
3590						3595					3600			
Phe	Phe	Leu	Tyr	Glu	Asn	Ala	Phe	Leu	Pro	Phe	Ala	Met	Gly	Ile
3605						3610					3615			
Ile	Ala	Met	Ser	Ala	Phe	Ala	Met	Met	Phe	Val	Lys	His	Lys	His
3620						3625					3630			
Ala	Phe	Leu	Cys	Leu	Phe	Leu	Leu	Pro	Ser	Leu	Ala	Thr	Val	Ala
3635						3640					3645			
Tyr	Phe	Asn	Met	Val	Tyr	Met	Pro	Ala	Ser	Trp	Val	Met	Arg	Ile
3650						3655					3660			
Met	Thr	Trp	Leu	Asp	Met	Val	Asp	Thr	Ser	Leu	Ser	Gly	Phe	Lys
3665						3670					3675			
Leu	Lys	Asp	Cys	Val	Met	Tyr	Ala	Ser	Ala	Val	Val	Leu	Leu	Ile
3680						3685					3690			
Leu	Met	Thr	Ala	Arg	Thr	Val	Tyr	Asp	Asp	Gly	Ala	Arg	Arg	Val
3695						3700					3705			
Trp	Thr	Leu	Met	Asn	Val	Leu	Thr	Leu	Val	Tyr	Lys	Val	Tyr	Tyr
3710						3715					3720			
Gly	Asn	Ala	Leu	Asp	Gln	Ala	Ile	Ser	Met	Trp	Ala	Leu	Ile	Ile
3725						3730					3735			

Ser	Val	Thr	Ser	Asn	Tyr	Ser	Gly	Val	Val	Thr	Thr	Val	Met	Phe
3740						3745					3750			
Leu	Ala	Arg	Gly	Ile	Val	Phe	Met	Cys	Val	Glu	Tyr	Cys	Pro	Ile
3755						3760					3765			
Phe	Phe	Ile	Thr	Gly	Asn	Thr	Leu	Gln	Cys	Ile	Met	Leu	Val	Tyr
3770						3775					3780			
Cys	Phe	Leu	Gly	Tyr	Phe	Cys	Thr	Cys	Tyr	Phe	Gly	Leu	Phe	Cys
3785						3790					3795			
Leu	Leu	Asn	Arg	Tyr	Phe	Arg	Leu	Thr	Leu	Gly	Val	Tyr	Asp	Tyr
3800						3805					3810			
Leu	Val	Ser	Thr	Gln	Glu	Phe	Arg	Tyr	Met	Asn	Ser	Gln	Gly	Leu
3815						3820					3825			
Leu	Pro	Pro	Lys	Asn	Ser	Ile	Asp	Ala	Phe	Lys	Leu	Asn	Ile	Lys
3830						3835					3840			
Leu	Leu	Gly	Val	Gly	Gly	Lys	Pro	Cys	Ile	Lys	Val	Ala	Thr	Val
3845						3850					3855			
Gln	Ser	Lys	Met	Ser	Asp	Val	Lys	Cys	Thr	Ser	Val	Val	Leu	Leu
3860						3865					3870			
Ser	Val	Leu	Gln	Gln	Leu	Arg	Val	Glu	Ser	Ser	Ser	Lys	Leu	Trp
3875						3880					3885			
Ala	Gln	Cys	Val	Gln	Leu	His	Asn	Asp	Ile	Leu	Leu	Ala	Lys	Asp
3890						3895					3900			
Thr	Thr	Glu	Ala	Phe	Glu	Lys	Met	Val	Ser	Leu	Leu	Ser	Val	Leu
3905						3910					3915			
Leu	Ser	Met	Gln	Gly	Ala	Val	Asp	Ile	Asn	Lys	Leu	Cys	Glu	Glu
3920						3925					3930			

Met	Leu	Asp	Asn	Arg	Ala	Thr	Leu	Gln	Ala	Ile	Ala	Ser	Glu	Phe
3935						3940					3945			
Ser	Ser	Leu	Pro	Ser	Tyr	Ala	Ala	Phe	Ala	Thr	Ala	Gln	Glu	Ala
3950						3955					3960			
Tyr	Glu	Gln	Ala	Val	Ala	Asn	Gly	Asp	Ser	Glu	Val	Val	Leu	Lys
3965						3970					3975			
Lys	Leu	Lys	Lys	Ser	Leu	Asn	Val	Ala	Lys	Ser	Glu	Phe	Asp	Arg
3980						3985					3990			
Asp	Ala	Ala	Met	Gln	Arg	Lys	Leu	Glu	Lys	Met	Ala	Asp	Gln	Ala
3995						4000					4005			
Met	Thr	Gln	Met	Tyr	Lys	Gln	Ala	Arg	Ser	Glu	Asp	Lys	Arg	Ala
4010						4015					4020			
Lys	Val	Thr	Ser	Ala	Met	Gln	Thr	Met	Leu	Phe	Thr	Met	Leu	Arg
4025						4030					4035			
Lys	Leu	Asp	Asn	Asp	Ala	Leu	Asn	Asn	Ile	Ile	Asn	Asn	Ala	Arg
4040						4045					4050			
Asp	Gly	Cys	Val	Pro	Leu	Asn	Ile	Ile	Pro	Leu	Thr	Thr	Ala	Ala
4055						4060					4065			
Lys	Leu	Met	Val	Val	Ile	Pro	Asp	Tyr	Asn	Thr	Tyr	Lys	Asn	Thr
4070						4075					4080			
Cys	Asp	Gly	Thr	Thr	Phe	Thr	Tyr	Ala	Ser	Ala	Leu	Trp	Glu	Ile
4085						4090					4095			
Gln	Gln	Val	Val	Asp	Ala	Asp	Ser	Lys	Ile	Val	Gln	Leu	Ser	Glu
4100						4105					4110			
Ile	Ser	Met	Asp	Asn	Ser	Pro	Asn	Leu	Ala	Trp	Pro	Leu	Ile	Val
4115						4120					4125			
Thr	Ala	Leu	Arg	Ala	Asn	Ser	Ala	Val	Lys	Leu	Gln	Asn	Asn	Glu
4130						4135					4140			

Leu	Ser	Pro	Val	Ala	Leu	Arg	Gln	Met	Ser	Cys	Ala	Ala	Gly	Thr
4145						4150					4155			
Thr	Gln	Thr	Ala	Cys	Thr	Asp	Asp	Asn	Ala	Leu	Ala	Tyr	Tyr	Asn
4160						4165					4170			
Thr	Thr	Lys	Gly	Gly	Arg	Phe	Val	Leu	Ala	Leu	Leu	Ser	Asp	Leu
4175						4180					4185			
Gln	Asp	Leu	Lys	Trp	Ala	Arg	Phe	Pro	Lys	Ser	Asp	Gly	Thr	Gly
4190						4195					4200			
Thr	Ile	Tyr	Thr	Glu	Leu	Glu	Pro	Pro	Cys	Arg	Phe	Val	Thr	Asp
4205						4210					4215			
Thr	Pro	Lys	Gly	Pro	Lys	Val	Lys	Tyr	Leu	Tyr	Phe	Ile	Lys	Gly
4220						4225					4230			
Leu	Asn	Asn	Leu	Asn	Arg	Gly	Met	Val	Leu	Gly	Ser	Leu	Ala	Ala
4235						4240					4245			
Thr	Val	Arg	Leu	Gln	Ala	Gly	Asn	Ala	Thr	Glu	Val	Pro	Ala	Asn
4250						4255					4260			
Ser	Thr	Val	Leu	Ser	Phe	Cys	Ala	Phe	Ala	Val	Asp	Ala	Ala	Lys
4265						4270					4275			
Ala	Tyr	Lys	Asp	Tyr	Leu	Ala	Ser	Gly	Gly	Gln	Pro	Ile	Thr	Asn
4280						4285					4290			
Cys	Val	Lys	Met	Leu	Cys	Thr	His	Thr	Gly	Thr	Gly	Gln	Ala	Ile
4295						4300					4305			
Thr	Val	Thr	Pro	Glu	Ala	Asn	Met	Asp	Gln	Glu	Ser	Phe	Gly	Gly
4310						4315					4320			
Ala	Ser	Cys	Cys	Leu	Tyr	Cys	Arg	Cys	His	Ile	Asp	His	Pro	Asn
4325						4330					4335			

Pro	Lys	Gly	Phe	Cys	Asp	Leu	Lys	Gly	Lys	Tyr	Val	Gln	Ile	Pro
4340						4345					4350			
Thr	Thr	Cys	Ala	Asn	Asp	Pro	Val	Gly	Phe	Thr	Leu	Lys	Asn	Thr
4355						4360					4365			
Val	Cys	Thr	Val	Cys	Gly	Met	Trp	Lys	Gly	Tyr	Gly	Cys	Ser	Cys
4370						4375					4380			
Asp	Gln	Leu	Arg	Glu	Pro	Met	Leu	Gln	Ser	Ala	Asp	Ala	Gln	Ser
4385						4390					4395			
Phe	Leu	Asn	Arg	Val	Cys	Gly	Val	Ser	Ala	Ala	Arg	Leu	Thr	Pro
4400						4405					4410			
Cys	Gly	Thr	Gly	Thr	Ser	Thr	Asp	Val	Val	Tyr	Arg	Ala	Phe	Asp
4415						4420					4425			
Ile	Tyr	Asn	Asp	Lys	Val	Ala	Gly	Phe	Ala	Lys	Phe	Leu	Lys	Thr
4430						4435					4440			
Asn	Cys	Cys	Arg	Phe	Gln	Glu	Lys	Asp	Glu	Asp	Asp	Asn	Leu	Ile
4445						4450					4455			
Asp	Ser	Tyr	Phe	Val	Val	Lys	Arg	His	Thr	Phe	Ser	Asn	Tyr	Gln
4460						4465					4470			
His	Glu	Glu	Thr	Ile	Tyr	Asn	Leu	Leu	Lys	Asp	Cys	Pro	Ala	Val
4475						4480					4485			
Ala	Lys	His	Asp	Phe	Phe	Lys	Phe	Arg	Ile	Asp	Gly	Asp	Met	Val
4490						4495					4500			
Pro	His	Ile	Ser	Arg	Gln	Arg	Leu	Thr	Lys	Tyr	Thr	Met	Ala	Asp
4505						4510					4515			
Leu	Val	Tyr	Ala	Leu	Arg	His	Phe	Asp	Glu	Gly	Asn	Cys	Asp	Thr
4520						4525					4530			
Leu	Lys	Glu	Ile	Leu	Val	Thr	Tyr	Asn	Cys	Cys	Asp	Asp	Asp	Tyr
4535						4540					4545			

Phe	Asn	Lys	Lys	Asp	Trp	Tyr	Asp	Phe	Val	Glu	Asn	Pro	Asp	Ile
4550						4555					4560			
Leu	Arg	Val	Tyr	Ala	Asn	Leu	Gly	Glu	Arg	Val	Arg	Gln	Ala	Leu
4565						4570					4575			
Leu	Lys	Thr	Val	Gln	Phe	Cys	Asp	Ala	Met	Arg	Asn	Ala	Gly	Ile
4580						4585					4590			
Val	Gly	Val	Leu	Thr	Leu	Asp	Asn	Gln	Asp	Leu	Asn	Gly	Asn	Trp
4595						4600					4605			
Tyr	Asp	Phe	Gly	Asp	Phe	Ile	Gln	Thr	Thr	Pro	Gly	Ser	Gly	Val
4610						4615					4620			
Pro	Val	Val	Asp	Ser	Tyr	Tyr	Ser	Leu	Leu	Met	Pro	Ile	Leu	Thr
4625						4630					4635			
Leu	Thr	Arg	Ala	Leu	Thr	Ala	Glu	Ser	His	Val	Asp	Thr	Asp	Leu
4640						4645					4650			
Thr	Lys	Pro	Tyr	Ile	Lys	Trp	Asp	Leu	Leu	Lys	Tyr	Asp	Phe	Thr
4655						4660					4665			
Glu	Glu	Arg	Leu	Lys	Leu	Phe	Asp	Arg	Tyr	Phe	Lys	Tyr	Trp	Asp
4670						4675					4680			
Gln	Thr	Tyr	His	Pro	Asn	Cys	Val	Asn	Cys	Leu	Asp	Asp	Arg	Cys
4685						4690					4695			
Ile	Leu	His	Cys	Ala	Asn	Phe	Asn	Val	Leu	Phe	Ser	Thr	Val	Phe
4700						4705					4710			
Pro	Pro	Thr	Ser	Phe	Gly	Pro	Leu	Val	Arg	Lys	Ile	Phe	Val	Asp
4715						4720					4725			
Gly	Val	Pro	Phe	Val	Val	Ser	Thr	Gly	Tyr	His	Phe	Arg	Glu	Leu
4730						4735					4740			

Gly Val	Val His	Asn Gln	Asp Val	Asn Leu	His Ser	Ser Arg	Leu
4745			4750		4755		
Ser Phe	Lys Glu	Leu Leu	Val Tyr	Ala Ala	Asp Pro	Ala Met	His
4760			4765		4770		
Ala Ala	Ser Gly	Asn Leu	Leu Leu	Asp Lys	Arg Thr	Thr Cys	Phe
4775			4780		4785		
Ser Val	Ala Ala	Leu Thr	Asn Asn	Val Ala	Phe Gln	Thr Val	Lys
4790			4795		4800		
Pro Gly	Asn Phe	Asn Lys	Asp Phe	Tyr Asp	Phe Ala	Val Ser	Lys
4805			4810		4815		
Gly Phe	Phe Lys	Glu Gly	Ser Ser	Val Glu	Leu Lys	His Phe	Phe
4820			4825		4830		
Phe Ala	Gln Asp	Gly Asn	Ala Ala	Ile Ser	Asp Tyr	Asp Tyr	Tyr
4835			4840		4845		
Arg Tyr	Asn Leu	Pro Thr	Met Cys	Asp Ile	Arg Gln	Leu Leu	Phe
4850			4855		4860		
Val Val	Glu Val	Val Asp	Lys Tyr	Phe Asp	Cys Tyr	Asp Gly	Gly
4865			4870		4875		
Cys Ile	Asn Ala	Asn Gln	Val Ile	Val Asn	Asn Leu	Asp Lys	Ser
4880			4885		4890		
Ala Gly	Phe Pro	Phe Asn	Lys Trp	Gly Lys	Ala Arg	Leu Tyr	Tyr
4895			4900		4905		
Asp Ser	Met Ser	Tyr Glu	Asp Gln	Asp Ala	Leu Phe	Ala Tyr	Thr
4910			4915		4920		
Lys Arg	Asn Val	Ile Pro	Thr Ile	Thr Gln	Met Asn	Leu Lys	Tyr
4925			4930		4935		
Ala Ile	Ser Ala	Lys Asn	Arg Ala	Arg Thr	Val Ala	Gly Val	Ser
4940			4945		4950		

Ile	Cys	Ser	Thr	Met	Thr	Asn	Arg	Gln	Phe	His	Gln	Lys	Leu	Leu
	4955					4960					4965			
Lys	Ser	Ile	Ala	Ala	Thr	Arg	Gly	Ala	Thr	Val	Val	Ile	Gly	Thr
	4970					4975					4980			
Ser	Lys	Phe	Tyr	Gly	Gly	Trp	His	Asn	Met	Leu	Lys	Thr	Val	Tyr
	4985					4990					4995			
Ser	Asp	Val	Glu	Asn	Pro	His	Leu	Met	Gly	Trp	Asp	Tyr	Pro	Lys
	5000					5005					5010			
Cys	Asp	Arg	Ala	Met	Pro	Asn	Met	Leu	Arg	Ile	Met	Ala	Ser	Leu
	5015					5020					5025			
Val	Leu	Ala	Arg	Lys	His	Thr	Thr	Cys	Cys	Ser	Leu	Ser	His	Arg
	5030					5035					5040			
Phe	Tyr	Arg	Leu	Ala	Asn	Glu	Cys	Ala	Gln	Val	Leu	Ser	Glu	Met
	5045					5050					5055			
Val	Met	Cys	Gly	Gly	Ser	Leu	Tyr	Val	Lys	Pro	Gly	Gly	Thr	Ser
	5060					5065					5070			
Ser	Gly	Asp	Ala	Thr	Thr	Ala	Tyr	Ala	Asn	Ser	Val	Phe	Asn	Ile
	5075					5080					5085			
Cys	Gln	Ala	Val	Thr	Ala	Asn	Val	Asn	Ala	Leu	Leu	Ser	Thr	Asp
	5090					5095					5100			
Gly	Asn	Lys	Ile	Ala	Asp	Lys	Tyr	Val	Arg	Asn	Leu	Gln	His	Arg
	5105					5110					5115			
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Val	Asn	Glu	Phe	Tyr	Ala	Tyr	Leu	Arg	Lys	His	Phe	Ser	Met	Met
	5135					5140					5145			

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Ser	Gln	Gly	Leu	Val	Ala	Ser	Ile	Lys	Asn	Phe	Lys	Ser	Val	Leu
5165						5170					5175			
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5180						5185					5190			
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5255						5260					5265			
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5270						5275					5280			
His	Asp	Glu	Leu	Thr	Gly	His	Met	Leu	Asp	Met	Tyr	Ser	Val	Met
5285						5290					5295			
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5345						5350					5355			

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Ser	Phe	Pro	Leu	Cys	Ala	Asn	Gly	Gln	Val	Phe	Gly	Leu	Tyr	Lys
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Asn	Thr	Cys	Val	Gly	Ser	Asp	Asn	Val	Thr	Asp	Phe	Asn	Ala	Ile
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Ala	Thr	Cys	Asp	Trp	Thr	Asn	Ala	Gly	Asp	Tyr	Ile	Leu	Ala	Asn
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Thr	Cys	Thr	Glu	Arg	Leu	Lys	Leu	Phe	Ala	Ala	Glu	Thr	Leu	Lys
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Ala	Thr	Glu	Glu	Thr	Phe	Lys	Leu	Ser	Tyr	Gly	Ile	Ala	Thr	Val
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Arg	Glu	Val	Leu	Ser	Asp	Arg	Glu	Leu	His	Leu	Ser	Trp	Glu	Val
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Gly	Lys	Pro	Arg	Pro	Pro	Leu	Asn	Arg	Asn	Tyr	Val	Phe	Thr	Gly
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Phe	Glu	Lys	Gly	Asp	Tyr	Gly	Asp	Ala	Val	Val	Tyr	Arg	Gly	Thr
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Thr	Thr	Tyr	Lys	Leu	Asn	Val	Gly	Asp	Tyr	Phe	Val	Leu	Thr	Ser
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Gln	Lys	Tyr	Ser	Thr	Leu	Gln	Gly	Pro	Pro	Gly	Thr	Gly	Lys	Ser
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His	Phe	Ala	Ile	Gly	Leu	Ala	Leu	Tyr	Tyr	Pro	Ser	Ala	Arg	Ile
5615						5620					5625			
Val	Tyr	Thr	Ala	Cys	Ser	His	Ala	Ala	Val	Asp	Ala	Leu	Cys	Glu
5630						5635					5640			
Lys	Ala	Leu	Lys	Tyr	Leu	Pro	Ile	Asp	Lys	Cys	Ser	Arg	Ile	Ile
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Ser	Thr	Leu	Glu	Gln	Tyr	Val	Phe	Cys	Thr	Val	Asn	Ala	Leu	Pro
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Glu	Thr	Thr	Ala	Asp	Ile	Val	Val	Phe	Asp	Glu	Ile	Ser	Met	Ala
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Thr	Asn	Tyr	Asp	Leu	Ser	Val	Val	Asn	Ala	Arg	Leu	Arg	Ala	Lys
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His	Tyr	Val	Tyr	Ile	Gly	Asp	Pro	Ala	Gln	Leu	Pro	Ala	Pro	Arg
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Thr	Leu	Leu	Thr	Lys	Gly	Thr	Leu	Glu	Pro	Glu	Tyr	Phe	Asn	Ser
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Val	Cys	Arg	Leu	Met	Lys	Thr	Ile	Gly	Pro	Asp	Met	Phe	Leu	Gly
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Gln	Cys	Phe	Lys	Met	Phe	Tyr	Lys	Gly	Val	Ile	Thr	His	Asp	Val
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Val	Thr	Gly	Leu	Phe	Lys	Asp	Cys	Ser	Lys	Val	Ile	Thr	Gly	Leu
5930						5935					5940			
His	Pro	Thr	Gln	Ala	Pro	Thr	His	Leu	Ser	Val	Asp	Thr	Lys	Phe
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Val	Leu	Trp	Ala	His	Gly	Phe	Glu	Leu	Thr	Ser	Met	Lys	Tyr	Phe
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Ala	Ile	Met	Thr	Arg	Cys	Leu	Ala	Val	His	Glu	Cys	Phe	Val	Lys
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6845						6850					6855			
Val	Pro	Tyr	Asn	Met	Arg	Val	Ile	His	Phe	Gly	Ala	Gly	Ser	Asp
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Tyr Lys Leu Met Gly His Phe Ala Trp Trp Thr Ala Phe Val Thr
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Asn Val Asn Ala Ser Ser Ser Glu Ala Phe Leu Ile Gly Cys Asn
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Tyr Leu Gly Lys Pro Arg Glu Gln Ile Asp Gly Tyr Val Met His
7010 7015 7020

Ala Asn Tyr Ile Phe Trp Arg Asn Thr Asn Pro Ile Gln Leu Ser
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Ser Tyr Ser Leu Phe Asp Met Ser Lys Phe Pro Leu Lys Leu Arg
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Gly Thr Ala Val Met Ser Leu Lys Glu Gly Gln Ile Asn Asp Met
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<211> 4405

<212> PRT

<213> Severe acute respiratory syndrome coronavirus 2

<400> 327

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20 25 30

Asp Ser Val Glu Glu Val Leu Ser Glu Ala Arg Gln His Leu Lys Asp
35 40 45

Gly Thr Cys Gly Leu Val Glu Val Glu Lys Gly Val Leu Pro Gln Leu
50 55 60

Glu Gln Pro Tyr Val Phe Ile Lys Arg Ser Asp Ala Arg Thr Ala Pro
65 70 75 80

His Gly His Val Met Val Glu Leu Val Ala Glu Leu Glu Gly Ile Gln
85 90 95

Tyr Gly Arg Ser Gly Glu Thr Leu Gly Val Leu Val Pro His Val Gly
100 105 110

Glu Ile Pro Val Ala Tyr Arg Lys Val Leu Leu Arg Lys Asn Gly Asn
115 120 125

Lys Gly Ala Gly Gly His Ser Tyr Gly Ala Asp Leu Lys Ser Phe Asp
130 135 140

Leu Gly Asp Glu Leu Gly Thr Asp Pro Tyr Glu Asp Phe Gln Glu Asn
145 150 155 160

Trp Asn Thr Lys His Ser Ser Gly Val Thr Arg Glu Leu Met Arg Glu
165 170 175

Leu Asn Gly Gly Ala Tyr Thr Arg Tyr Val Asp Asn Asn Phe Cys Gly
180 185 190

Pro Asp Gly Tyr Pro Leu Glu Cys Ile Lys Asp Leu Leu Ala Arg Ala
195 200 205

Gly Lys Ala Ser Cys Thr Leu Ser Glu Gln Leu Asp Phe Ile Asp Thr
210 215 220

Lys Arg Gly Val Tyr Cys Cys Arg Glu His Glu His Glu Ile Ala Trp
225 230 235 240

Tyr Thr Glu Arg Ser Glu Lys Ser Tyr Glu Leu Gln Thr Pro Phe Glu
245 250 255

Ile Lys Leu Ala Lys Lys Phe Asp Thr Phe Asn Gly Glu Cys Pro Asn
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Phe Val Phe Pro Leu Asn Ser Ile Ile Lys Thr Ile Gln Pro Arg Val
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Glu Lys Lys Lys Leu Asp Gly Phe Met Gly Arg Ile Arg Ser Val Tyr
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Pro Val Ala Ser Pro Asn Glu Cys Asn Gln Met Cys Leu Ser Thr Leu
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Met Lys Cys Asp His Cys Gly Glu Thr Ser Trp Gln Thr Gly Asp Phe
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Val Lys Ala Thr Cys Glu Phe Cys Gly Thr Glu Asn Leu Thr Lys Glu
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Gly Ala Thr Thr Cys Gly Tyr Leu Pro Gln Asn Ala Val Val Lys Ile
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Tyr Cys Pro Ala Cys His Asn Ser Glu Val Gly Pro Glu His Ser Leu
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Ala Glu Tyr His Asn Glu Ser Gly Leu Lys Thr Ile Leu Arg Lys Gly
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Gly Arg Thr Ile Ala Phe Gly Gly Cys Val Phe Ser Tyr Val Gly Cys
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His Asn Lys Cys Ala Tyr Trp Val Pro Arg Ala Ser Ala Asn Ile Gly
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Cys Asn His Thr Gly Val Val Gly Glu Gly Ser Glu Gly Leu Asn Asp
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Asn Leu Leu Glu Ile Leu Gln Lys Glu Lys Val Asn Ile Asn Ile Val
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Gly Asp Phe Lys Leu Asn Glu Glu Ile Ala Ile Ile Leu Ala Ser Phe
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Ser Ala Ser Thr Ser Ala Phe Val Glu Thr Val Lys Gly Leu Asp Tyr
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Lys Ala Phe Lys Gln Ile Val Glu Ser Cys Gly Asn Phe Lys Val Thr
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Lys Gly Lys Ala Lys Lys Gly Ala Trp Asn Ile Gly Glu Gln Lys Ser
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Ile Leu Ser Pro Leu Tyr Ala Phe Ala Ser Glu Ala Ala Arg Val Val
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Val Leu Gln Lys Ala Ala Ile Thr Ile Leu Asp Gly Ile Ser Gln Tyr
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Ser Leu Arg Leu Ile Asp Ala Met Met Phe Thr Ser Asp Leu Ala Thr
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Asn Asn Leu Val Val Met Ala Tyr Ile Thr Gly Gly Val Val Gln Leu
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Thr Ser Gln Trp Leu Thr Asn Ile Phe Gly Thr Val Tyr Glu Lys Leu
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Lys Pro Val Leu Asp Trp Leu Glu Glu Lys Phe Lys Glu Gly Val Glu
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Phe Leu Arg Asp Gly Trp Glu Ile Val Lys Phe Ile Ser Thr Cys Ala
645 650 655

Cys Glu Ile Val Gly Gly Gln Ile Val Thr Cys Ala Lys Glu Ile Lys
660 665 670

Glu Ser Val Gln Thr Phe Phe Lys Leu Val Asn Lys Phe Leu Ala Leu
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Cys Ala Asp Ser Ile Ile Ile Gly Gly Ala Lys Leu Lys Ala Leu Asn
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Leu Gly Glu Thr Phe Val Thr His Ser Lys Gly Leu Tyr Arg Lys Cys
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Val Lys Ser Arg Glu Glu Thr Gly Leu Leu Met Pro Leu Lys Ala Pro
725 730 735

Lys Glu Ile Ile Phe Leu Glu Gly Glu Thr Leu Pro Thr Glu Val Leu
740 745 750

Thr Glu Glu Val Val Leu Lys Thr Gly Asp Leu Gln Pro Leu Glu Gln
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Pro Thr Ser Glu Ala Val Glu Ala Pro Leu Val Gly Thr Pro Val Cys
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Ile Asn Gly Leu Met Leu Leu Glu Ile Lys Asp Thr Glu Lys Tyr Cys
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Ala Leu Ala Pro Asn Met Met Val Thr Asn Asn Thr Phe Thr Leu Lys
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Gly Gly Ala Pro Thr Lys Val Thr Phe Gly Asp Asp Thr Val Ile Glu
820 825 830

Val Gln Gly Tyr Lys Ser Val Asn Ile Thr Phe Glu Leu Asp Glu Arg
835 840 845

Ile Asp Lys Val Leu Asn Glu Lys Cys Ser Ala Tyr Thr Val Glu Leu
850 855 860

Gly Thr Glu Val Asn Glu Phe Ala Cys Val Val Ala Asp Ala Val Ile
865 870 875 880

Lys Thr Leu Gln Pro Val Ser Glu Leu Leu Thr Pro Leu Gly Ile Asp
885 890 895

Leu Asp Glu Trp Ser Met Ala Thr Tyr Tyr Leu Phe Asp Glu Ser Gly
900 905 910

Glu Phe Lys Leu Ala Ser His Met Tyr Cys Ser Phe Tyr Pro Pro Asp
915 920 925

Glu Asp Glu Glu Glu Gly Asp Cys Glu Glu Glu Glu Phe Glu Pro Ser
 930 935 940

Thr Gln Tyr Glu Tyr Gly Thr Glu Asp Asp Tyr Gln Gly Lys Pro Leu
 945 950 955 960

Glu Phe Gly Ala Thr Ser Ala Ala Leu Gln Pro Glu Glu Glu Gln Glu
 965 970 975

Glu Asp Trp Leu Asp Asp Asp Ser Gln Gln Thr Val Gly Gln Gln Asp
 980 985 990

Gly Ser Glu Asp Asn Gln Thr Thr Thr Ile Gln Thr Ile Val Glu Val
 995 1000 1005

Gln Pro Gln Leu Glu Met Glu Leu Thr Pro Val Val Gln Thr Ile
 1010 1015 1020

Glu Val Asn Ser Phe Ser Gly Tyr Leu Lys Leu Thr Asp Asn Val
 1025 1030 1035

Tyr Ile Lys Asn Ala Asp Ile Val Glu Glu Ala Lys Lys Val Lys
 1040 1045 1050

Pro Thr Val Val Val Asn Ala Ala Asn Val Tyr Leu Lys His Gly
 1055 1060 1065

Gly Gly Val Ala Gly Ala Leu Asn Lys Ala Thr Asn Asn Ala Met
 1070 1075 1080

Gln Val Glu Ser Asp Asp Tyr Ile Ala Thr Asn Gly Pro Leu Lys
 1085 1090 1095

Val Gly Gly Ser Cys Val Leu Ser Gly His Asn Leu Ala Lys His
 1100 1105 1110

Cys Leu His Val Val Gly Pro Asn Val Asn Lys Gly Glu Asp Ile
 1115 1120 1125

Gln	Leu	Leu	Lys	Ser	Ala	Tyr	Glu	Asn	Phe	Asn	Gln	His	Glu	Val
1130						1135					1140			
Leu	Leu	Ala	Pro	Leu	Leu	Ser	Ala	Gly	Ile	Phe	Gly	Ala	Asp	Pro
1145						1150					1155			
Ile	His	Ser	Leu	Arg	Val	Cys	Val	Asp	Thr	Val	Arg	Thr	Asn	Val
1160						1165					1170			
Tyr	Leu	Ala	Val	Phe	Asp	Lys	Asn	Leu	Tyr	Asp	Lys	Leu	Val	Ser
1175						1180					1185			
Ser	Phe	Leu	Glu	Met	Lys	Ser	Glu	Lys	Gln	Val	Glu	Gln	Lys	Ile
1190						1195					1200			
Ala	Glu	Ile	Pro	Lys	Glu	Glu	Val	Lys	Pro	Phe	Ile	Thr	Glu	Ser
1205						1210					1215			
Lys	Pro	Ser	Val	Glu	Gln	Arg	Lys	Gln	Asp	Asp	Lys	Lys	Ile	Lys
1220						1225					1230			
Ala	Cys	Val	Glu	Glu	Val	Thr	Thr	Thr	Leu	Glu	Glu	Thr	Lys	Phe
1235						1240					1245			
Leu	Thr	Glu	Asn	Leu	Leu	Leu	Tyr	Ile	Asp	Ile	Asn	Gly	Asn	Leu
1250						1255					1260			
His	Pro	Asp	Ser	Ala	Thr	Leu	Val	Ser	Asp	Ile	Asp	Ile	Thr	Phe
1265						1270					1275			
Leu	Lys	Lys	Asp	Ala	Pro	Tyr	Ile	Val	Gly	Asp	Val	Val	Gln	Glu
1280						1285					1290			
Gly	Val	Leu	Thr	Ala	Val	Val	Ile	Pro	Thr	Lys	Lys	Ala	Gly	Gly
1295						1300					1305			
Thr	Thr	Glu	Met	Leu	Ala	Lys	Ala	Leu	Arg	Lys	Val	Pro	Thr	Asp
1310						1315					1320			
Asn	Tyr	Ile	Thr	Thr	Tyr	Pro	Gly	Gln	Gly	Leu	Asn	Gly	Tyr	Thr
1325						1330					1335			

Val 1340	Glu	Glu	Ala	Lys	Thr	Val 1345	Leu	Lys	Lys	Cys	Lys 1350	Ser	Ala	Phe
Tyr 1355	Ile	Leu	Pro	Ser	Ile	Ile 1360	Ser	Asn	Glu	Lys	Gln 1365	Glu	Ile	Leu
Gly 1370	Thr	Val	Ser	Trp	Asn	Leu 1375	Arg	Glu	Met	Leu	Ala 1380	His	Ala	Glu
Glu 1385	Thr	Arg	Lys	Leu	Met	Pro 1390	Val	Cys	Val	Glu	Thr 1395	Lys	Ala	Ile
Val 1400	Ser	Thr	Ile	Gln	Arg	Lys 1405	Tyr	Lys	Gly	Ile	Lys 1410	Ile	Gln	Glu
Gly 1415	Val	Val	Asp	Tyr	Gly	Ala 1420	Arg	Phe	Tyr	Phe	Tyr 1425	Thr	Ser	Lys
Thr 1430	Thr	Val	Ala	Ser	Leu	Ile 1435	Asn	Thr	Leu	Asn	Asp 1440	Leu	Asn	Glu
Thr 1445	Leu	Val	Thr	Met	Pro	Leu 1450	Gly	Tyr	Val	Thr	His 1455	Gly	Leu	Asn
Leu 1460	Glu	Glu	Ala	Ala	Arg	Tyr 1465	Met	Arg	Ser	Leu	Lys 1470	Val	Pro	Ala
Thr 1475	Val	Ser	Val	Ser	Ser	Pro 1480	Asp	Ala	Val	Thr	Ala 1485	Tyr	Asn	Gly
Tyr 1490	Leu	Thr	Ser	Ser	Ser	Lys 1495	Thr	Pro	Glu	Glu	His 1500	Phe	Ile	Glu
Thr 1505	Ile	Ser	Leu	Ala	Gly	Ser 1510	Tyr	Lys	Asp	Trp	Ser 1515	Tyr	Ser	Gly
Gln 1520	Ser	Thr	Gln	Leu	Gly	Ile 1525	Glu	Phe	Leu	Lys	Arg 1530	Gly	Asp	Lys

Ser	Val	Tyr	Tyr	Thr	Ser	Asn	Pro	Thr	Thr	Phe	His	Leu	Asp	Gly
1535						1540					1545			
Glu	Val	Ile	Thr	Phe	Asp	Asn	Leu	Lys	Thr	Leu	Leu	Ser	Leu	Arg
1550						1555					1560			
Glu	Val	Arg	Thr	Ile	Lys	Val	Phe	Thr	Thr	Val	Asp	Asn	Ile	Asn
1565						1570					1575			
Leu	His	Thr	Gln	Val	Val	Asp	Met	Ser	Met	Thr	Tyr	Gly	Gln	Gln
1580						1585					1590			
Phe	Gly	Pro	Thr	Tyr	Leu	Asp	Gly	Ala	Asp	Val	Thr	Lys	Ile	Lys
1595						1600					1605			
Pro	His	Asn	Ser	His	Glu	Gly	Lys	Thr	Phe	Tyr	Val	Leu	Pro	Asn
1610						1615					1620			
Asp	Asp	Thr	Leu	Arg	Val	Glu	Ala	Phe	Glu	Tyr	Tyr	His	Thr	Thr
1625						1630					1635			
Asp	Pro	Ser	Phe	Leu	Gly	Arg	Tyr	Met	Ser	Ala	Leu	Asn	His	Thr
1640						1645					1650			
Lys	Lys	Trp	Lys	Tyr	Pro	Gln	Val	Asn	Gly	Leu	Thr	Ser	Ile	Lys
1655						1660					1665			
Trp	Ala	Asp	Asn	Asn	Cys	Tyr	Leu	Ala	Thr	Ala	Leu	Leu	Thr	Leu
1670						1675					1680			
Gln	Gln	Ile	Glu	Leu	Lys	Phe	Asn	Pro	Pro	Ala	Leu	Gln	Asp	Ala
1685						1690					1695			
Tyr	Tyr	Arg	Ala	Arg	Ala	Gly	Glu	Ala	Ala	Asn	Phe	Cys	Ala	Leu
1700						1705					1710			
Ile	Leu	Ala	Tyr	Cys	Asn	Lys	Thr	Val	Gly	Glu	Leu	Gly	Asp	Val
1715						1720					1725			
Arg	Glu	Thr	Met	Ser	Tyr	Leu	Phe	Gln	His	Ala	Asn	Leu	Asp	Ser
1730						1735					1740			

Cys	Lys	Arg	Val	Leu	Asn	Val	Val	Cys	Lys	Thr	Cys	Gly	Gln	Gln
1745						1750					1755			
Gln	Thr	Thr	Leu	Lys	Gly	Val	Glu	Ala	Val	Met	Tyr	Met	Gly	Thr
1760						1765					1770			
Leu	Ser	Tyr	Glu	Gln	Phe	Lys	Lys	Gly	Val	Gln	Ile	Pro	Cys	Thr
1775						1780					1785			
Cys	Gly	Lys	Gln	Ala	Thr	Lys	Tyr	Leu	Val	Gln	Gln	Glu	Ser	Pro
1790						1795					1800			
Phe	Val	Met	Met	Ser	Ala	Pro	Pro	Ala	Gln	Tyr	Glu	Leu	Lys	His
1805						1810					1815			
Gly	Thr	Phe	Thr	Cys	Ala	Ser	Glu	Tyr	Thr	Gly	Asn	Tyr	Gln	Cys
1820						1825					1830			
Gly	His	Tyr	Lys	His	Ile	Thr	Ser	Lys	Glu	Thr	Leu	Tyr	Cys	Ile
1835						1840					1845			
Asp	Gly	Ala	Leu	Leu	Thr	Lys	Ser	Ser	Glu	Tyr	Lys	Gly	Pro	Ile
1850						1855					1860			
Thr	Asp	Val	Phe	Tyr	Lys	Glu	Asn	Ser	Tyr	Thr	Thr	Thr	Ile	Lys
1865						1870					1875			
Pro	Val	Thr	Tyr	Lys	Leu	Asp	Gly	Val	Val	Cys	Thr	Glu	Ile	Asp
1880						1885					1890			
Pro	Lys	Leu	Asp	Asn	Tyr	Tyr	Lys	Lys	Asp	Asn	Ser	Tyr	Phe	Thr
1895						1900					1905			
Glu	Gln	Pro	Ile	Asp	Leu	Val	Pro	Asn	Gln	Pro	Tyr	Pro	Asn	Ala
1910						1915					1920			
Ser	Phe	Asp	Asn	Phe	Lys	Phe	Val	Cys	Asp	Asn	Ile	Lys	Phe	Ala
1925						1930					1935			

Asp 1940	Asp	Leu	Asn	Gln	Leu	Thr 1945	Gly	Tyr	Lys	Lys	Pro 1950	Ala	Ser	Arg
Glu 1955	Leu	Lys	Val	Thr	Phe	Phe 1960	Pro	Asp	Leu	Asn	Gly 1965	Asp	Val	Val
Ala 1970	Ile	Asp	Tyr	Lys	His	Tyr 1975	Thr	Pro	Ser	Phe	Lys 1980	Lys	Gly	Ala
Lys 1985	Leu	Leu	His	Lys	Pro	Ile 1990	Val	Trp	His	Val	Asn 1995	Asn	Ala	Thr
Asn 2000	Lys	Ala	Thr	Tyr	Lys	Pro 2005	Asn	Thr	Trp	Cys	Ile 2010	Arg	Cys	Leu
Trp 2015	Ser	Thr	Lys	Pro	Val	Glu 2020	Thr	Ser	Asn	Ser	Phe 2025	Asp	Val	Leu
Lys 2030	Ser	Glu	Asp	Ala	Gln	Gly 2035	Met	Asp	Asn	Leu	Ala 2040	Cys	Glu	Asp
Leu 2045	Lys	Pro	Val	Ser	Glu	Glu 2050	Val	Val	Glu	Asn	Pro 2055	Thr	Ile	Gln
Lys 2060	Asp	Val	Leu	Glu	Cys	Asn 2065	Val	Lys	Thr	Thr	Glu 2070	Val	Val	Gly
Asp 2075	Ile	Ile	Leu	Lys	Pro	Ala 2080	Asn	Asn	Ser	Leu	Lys 2085	Ile	Thr	Glu
Glu 2090	Val	Gly	His	Thr	Asp	Leu 2095	Met	Ala	Ala	Tyr	Val 2100	Asp	Asn	Ser
Ser 2105	Leu	Thr	Ile	Lys	Lys	Pro 2110	Asn	Glu	Leu	Ser	Arg 2115	Val	Leu	Gly
Leu 2120	Lys	Thr	Leu	Ala	Thr	His 2125	Gly	Leu	Ala	Ala	Val 2130	Asn	Ser	Val
Pro 2135	Trp	Asp	Thr	Ile	Ala	Asn 2140	Tyr	Ala	Lys	Pro	Phe 2145	Leu	Asn	Lys

Val 2150	Val	Ser	Thr	Thr	Thr	Asn 2155	Ile	Val	Thr	Arg	Cys 2160	Leu	Asn	Arg
Val 2165	Cys	Thr	Asn	Tyr	Met	Pro 2170	Tyr	Phe	Phe	Thr	Leu 2175	Leu	Leu	Gln
Leu 2180	Cys	Thr	Phe	Thr	Arg	Ser 2185	Thr	Asn	Ser	Arg	Ile 2190	Lys	Ala	Ser
Met 2195	Pro	Thr	Thr	Ile	Ala	Lys 2200	Asn	Thr	Val	Lys	Ser 2205	Val	Gly	Lys
Phe 2210	Cys	Leu	Glu	Ala	Ser	Phe 2215	Asn	Tyr	Leu	Lys	Ser 2220	Pro	Asn	Phe
Ser 2225	Lys	Leu	Ile	Asn	Ile	Ile 2230	Ile	Trp	Phe	Leu	Leu 2235	Leu	Ser	Val
Cys 2240	Leu	Gly	Ser	Leu	Ile	Tyr 2245	Ser	Thr	Ala	Ala	Leu 2250	Gly	Val	Leu
Met 2255	Ser	Asn	Leu	Gly	Met	Pro 2260	Ser	Tyr	Cys	Thr	Gly 2265	Tyr	Arg	Glu
Gly 2270	Tyr	Leu	Asn	Ser	Thr	Asn 2275	Val	Thr	Ile	Ala	Thr 2280	Tyr	Cys	Thr
Gly 2285	Ser	Ile	Pro	Cys	Ser	Val 2290	Cys	Leu	Ser	Gly	Leu 2295	Asp	Ser	Leu
Asp 2300	Thr	Tyr	Pro	Ser	Leu	Glu 2305	Thr	Ile	Gln	Ile	Thr 2310	Ile	Ser	Ser
Phe 2315	Lys	Trp	Asp	Leu	Thr	Ala 2320	Phe	Gly	Leu	Val	Ala 2325	Glu	Trp	Phe
Leu 2330	Ala	Tyr	Ile	Leu	Phe	Thr 2335	Arg	Phe	Phe	Tyr	Val 2340	Leu	Gly	Leu

Ala	Ala	Ile	Met	Gln	Leu	Phe	Phe	Ser	Tyr	Phe	Ala	Val	His	Phe
2345						2350					2355			
Ile	Ser	Asn	Ser	Trp	Leu	Met	Trp	Leu	Ile	Ile	Asn	Leu	Val	Gln
2360						2365					2370			
Met	Ala	Pro	Ile	Ser	Ala	Met	Val	Arg	Met	Tyr	Ile	Phe	Phe	Ala
2375						2380					2385			
Ser	Phe	Tyr	Tyr	Val	Trp	Lys	Ser	Tyr	Val	His	Val	Val	Asp	Gly
2390						2395					2400			
Cys	Asn	Ser	Ser	Thr	Cys	Met	Met	Cys	Tyr	Lys	Arg	Asn	Arg	Ala
2405						2410					2415			
Thr	Arg	Val	Glu	Cys	Thr	Thr	Ile	Val	Asn	Gly	Val	Arg	Arg	Ser
2420						2425					2430			
Phe	Tyr	Val	Tyr	Ala	Asn	Gly	Gly	Lys	Gly	Phe	Cys	Lys	Leu	His
2435						2440					2445			
Asn	Trp	Asn	Cys	Val	Asn	Cys	Asp	Thr	Phe	Cys	Ala	Gly	Ser	Thr
2450						2455					2460			
Phe	Ile	Ser	Asp	Glu	Val	Ala	Arg	Asp	Leu	Ser	Leu	Gln	Phe	Lys
2465						2470					2475			
Arg	Pro	Ile	Asn	Pro	Thr	Asp	Gln	Ser	Ser	Tyr	Ile	Val	Asp	Ser
2480						2485					2490			
Val	Thr	Val	Lys	Asn	Gly	Ser	Ile	His	Leu	Tyr	Phe	Asp	Lys	Ala
2495						2500					2505			
Gly	Gln	Lys	Thr	Tyr	Glu	Arg	His	Ser	Leu	Ser	His	Phe	Val	Asn
2510						2515					2520			
Leu	Asp	Asn	Leu	Arg	Ala	Asn	Asn	Thr	Lys	Gly	Ser	Leu	Pro	Ile
2525						2530					2535			
Asn	Val	Ile	Val	Phe	Asp	Gly	Lys	Ser	Lys	Cys	Glu	Glu	Ser	Ser
2540						2545					2550			

Ala	Lys	Ser	Ala	Ser	Val	Tyr	Tyr	Ser	Gln	Leu	Met	Cys	Gln	Pro
2555						2560					2565			
Ile	Leu	Leu	Leu	Asp	Gln	Ala	Leu	Val	Ser	Asp	Val	Gly	Asp	Ser
2570						2575					2580			
Ala	Glu	Val	Ala	Val	Lys	Met	Phe	Asp	Ala	Tyr	Val	Asn	Thr	Phe
2585						2590					2595			
Ser	Ser	Thr	Phe	Asn	Val	Pro	Met	Glu	Lys	Leu	Lys	Thr	Leu	Val
2600						2605					2610			
Ala	Thr	Ala	Glu	Ala	Glu	Leu	Ala	Lys	Asn	Val	Ser	Leu	Asp	Asn
2615						2620					2625			
Val	Leu	Ser	Thr	Phe	Ile	Ser	Ala	Ala	Arg	Gln	Gly	Phe	Val	Asp
2630						2635					2640			
Ser	Asp	Val	Glu	Thr	Lys	Asp	Val	Val	Glu	Cys	Leu	Lys	Leu	Ser
2645						2650					2655			
His	Gln	Ser	Asp	Ile	Glu	Val	Thr	Gly	Asp	Ser	Cys	Asn	Asn	Tyr
2660						2665					2670			
Met	Leu	Thr	Tyr	Asn	Lys	Val	Glu	Asn	Met	Thr	Pro	Arg	Asp	Leu
2675						2680					2685			
Gly	Ala	Cys	Ile	Asp	Cys	Ser	Ala	Arg	His	Ile	Asn	Ala	Gln	Val
2690						2695					2700			
Ala	Lys	Ser	His	Asn	Ile	Ala	Leu	Ile	Trp	Asn	Val	Lys	Asp	Phe
2705						2710					2715			
Met	Ser	Leu	Ser	Glu	Gln	Leu	Arg	Lys	Gln	Ile	Arg	Ser	Ala	Ala
2720						2725					2730			
Lys	Lys	Asn	Asn	Leu	Pro	Phe	Lys	Leu	Thr	Cys	Ala	Thr	Thr	Arg
2735						2740					2745			

Gln	Val	Val	Asn	Val	Val	Thr	Thr	Lys	Ile	Ala	Leu	Lys	Gly	Gly
2750						2755					2760			
Lys	Ile	Val	Asn	Asn	Trp	Leu	Lys	Gln	Leu	Ile	Lys	Val	Thr	Leu
2765						2770					2775			
Val	Phe	Leu	Phe	Val	Ala	Ala	Ile	Phe	Tyr	Leu	Ile	Thr	Pro	Val
2780						2785					2790			
His	Val	Met	Ser	Lys	His	Thr	Asp	Phe	Ser	Ser	Glu	Ile	Ile	Gly
2795						2800					2805			
Tyr	Lys	Ala	Ile	Asp	Gly	Gly	Val	Thr	Arg	Asp	Ile	Ala	Ser	Thr
2810						2815					2820			
Asp	Thr	Cys	Phe	Ala	Asn	Lys	His	Ala	Asp	Phe	Asp	Thr	Trp	Phe
2825						2830					2835			
Ser	Gln	Arg	Gly	Gly	Ser	Tyr	Thr	Asn	Asp	Lys	Ala	Cys	Pro	Leu
2840						2845					2850			
Ile	Ala	Ala	Val	Ile	Thr	Arg	Glu	Val	Gly	Phe	Val	Val	Pro	Gly
2855						2860					2865			
Leu	Pro	Gly	Thr	Ile	Leu	Arg	Thr	Thr	Asn	Gly	Asp	Phe	Leu	His
2870						2875					2880			
Phe	Leu	Pro	Arg	Val	Phe	Ser	Ala	Val	Gly	Asn	Ile	Cys	Tyr	Thr
2885						2890					2895			
Pro	Ser	Lys	Leu	Ile	Glu	Tyr	Thr	Asp	Phe	Ala	Thr	Ser	Ala	Cys
2900						2905					2910			
Val	Leu	Ala	Ala	Glu	Cys	Thr	Ile	Phe	Lys	Asp	Ala	Ser	Gly	Lys
2915						2920					2925			
Pro	Val	Pro	Tyr	Cys	Tyr	Asp	Thr	Asn	Val	Leu	Glu	Gly	Ser	Val
2930						2935					2940			
Ala	Tyr	Glu	Ser	Leu	Arg	Pro	Asp	Thr	Arg	Tyr	Val	Leu	Met	Asp
2945						2950					2955			

Gly 2960	Ser	Ile	Ile	Gln	Phe	Pro 2965	Asn	Thr	Tyr	Leu	Glu 2970	Gly	Ser	Val
Arg 2975	Val	Val	Thr	Thr	Phe	Asp 2980	Ser	Glu	Tyr	Cys	Arg 2985	His	Gly	Thr
Cys 2990	Glu	Arg	Ser	Glu	Ala	Gly 2995	Val	Cys	Val	Ser	Thr 3000	Ser	Gly	Arg
Trp 3005	Val	Leu	Asn	Asn	Asp	Tyr 3010	Tyr	Arg	Ser	Leu	Pro 3015	Gly	Val	Phe
Cys 3020	Gly	Val	Asp	Ala	Val	Asn 3025	Leu	Leu	Thr	Asn	Met 3030	Phe	Thr	Pro
Leu 3035	Ile	Gln	Pro	Ile	Gly	Ala 3040	Leu	Asp	Ile	Ser	Ala 3045	Ser	Ile	Val
Ala 3050	Gly	Gly	Ile	Val	Ala	Ile 3055	Val	Val	Thr	Cys	Leu 3060	Ala	Tyr	Tyr
Phe 3065	Met	Arg	Phe	Arg	Arg	Ala 3070	Phe	Gly	Glu	Tyr	Ser 3075	His	Val	Val
Ala 3080	Phe	Asn	Thr	Leu	Leu	Phe 3085	Leu	Met	Ser	Phe	Thr 3090	Val	Leu	Cys
Leu 3095	Thr	Pro	Val	Tyr	Ser	Phe 3100	Leu	Pro	Gly	Val	Tyr 3105	Ser	Val	Ile
Tyr 3110	Leu	Tyr	Leu	Thr	Phe	Tyr 3115	Leu	Thr	Asn	Asp	Val 3120	Ser	Phe	Leu
Ala 3125	His	Ile	Gln	Trp	Met	Val 3130	Met	Phe	Thr	Pro	Leu 3135	Val	Pro	Phe
Trp 3140	Ile	Thr	Ile	Ala	Tyr	Ile 3145	Ile	Cys	Ile	Ser	Thr 3150	Lys	His	Phe

Tyr	Trp	Phe	Phe	Ser	Asn	Tyr	Leu	Lys	Arg	Arg	Val	Val	Phe	Asn
3155						3160					3165			
Gly	Val	Ser	Phe	Ser	Thr	Phe	Glu	Glu	Ala	Ala	Leu	Cys	Thr	Phe
3170						3175					3180			
Leu	Leu	Asn	Lys	Glu	Met	Tyr	Leu	Lys	Leu	Arg	Ser	Asp	Val	Leu
3185						3190					3195			
Leu	Pro	Leu	Thr	Gln	Tyr	Asn	Arg	Tyr	Leu	Ala	Leu	Tyr	Asn	Lys
3200						3205					3210			
Tyr	Lys	Tyr	Phe	Ser	Gly	Ala	Met	Asp	Thr	Thr	Ser	Tyr	Arg	Glu
3215						3220					3225			
Ala	Ala	Cys	Cys	His	Leu	Ala	Lys	Ala	Leu	Asn	Asp	Phe	Ser	Asn
3230						3235					3240			
Ser	Gly	Ser	Asp	Val	Leu	Tyr	Gln	Pro	Pro	Gln	Thr	Ser	Ile	Thr
3245						3250					3255			
Ser	Ala	Val	Leu	Gln	Ser	Gly	Phe	Arg	Lys	Met	Ala	Phe	Pro	Ser
3260						3265					3270			
Gly	Lys	Val	Glu	Gly	Cys	Met	Val	Gln	Val	Thr	Cys	Gly	Thr	Thr
3275						3280					3285			
Thr	Leu	Asn	Gly	Leu	Trp	Leu	Asp	Asp	Val	Val	Tyr	Cys	Pro	Arg
3290						3295					3300			
His	Val	Ile	Cys	Thr	Ser	Glu	Asp	Met	Leu	Asn	Pro	Asn	Tyr	Glu
3305						3310					3315			
Asp	Leu	Leu	Ile	Arg	Lys	Ser	Asn	His	Asn	Phe	Leu	Val	Gln	Ala
3320						3325					3330			
Gly	Asn	Val	Gln	Leu	Arg	Val	Ile	Gly	His	Ser	Met	Gln	Asn	Cys
3335						3340					3345			
Val	Leu	Lys	Leu	Lys	Val	Asp	Thr	Ala	Asn	Pro	Lys	Thr	Pro	Lys
3350						3355					3360			

Tyr	Lys	Phe	Val	Arg	Ile	Gln	Pro	Gly	Gln	Thr	Phe	Ser	Val	Leu
3365						3370					3375			
Ala	Cys	Tyr	Asn	Gly	Ser	Pro	Ser	Gly	Val	Tyr	Gln	Cys	Ala	Met
3380						3385					3390			
Arg	Pro	Asn	Phe	Thr	Ile	Lys	Gly	Ser	Phe	Leu	Asn	Gly	Ser	Cys
3395						3400					3405			
Gly	Ser	Val	Gly	Phe	Asn	Ile	Asp	Tyr	Asp	Cys	Val	Ser	Phe	Cys
3410						3415					3420			
Tyr	Met	His	His	Met	Glu	Leu	Pro	Thr	Gly	Val	His	Ala	Gly	Thr
3425						3430					3435			
Asp	Leu	Glu	Gly	Asn	Phe	Tyr	Gly	Pro	Phe	Val	Asp	Arg	Gln	Thr
3440						3445					3450			
Ala	Gln	Ala	Ala	Gly	Thr	Asp	Thr	Thr	Ile	Thr	Val	Asn	Val	Leu
3455						3460					3465			
Ala	Trp	Leu	Tyr	Ala	Ala	Val	Ile	Asn	Gly	Asp	Arg	Trp	Phe	Leu
3470						3475					3480			
Asn	Arg	Phe	Thr	Thr	Thr	Leu	Asn	Asp	Phe	Asn	Leu	Val	Ala	Met
3485						3490					3495			
Lys	Tyr	Asn	Tyr	Glu	Pro	Leu	Thr	Gln	Asp	His	Val	Asp	Ile	Leu
3500						3505					3510			
Gly	Pro	Leu	Ser	Ala	Gln	Thr	Gly	Ile	Ala	Val	Leu	Asp	Met	Cys
3515						3520					3525			
Ala	Ser	Leu	Lys	Glu	Leu	Leu	Gln	Asn	Gly	Met	Asn	Gly	Arg	Thr
3530						3535					3540			
Ile	Leu	Gly	Ser	Ala	Leu	Leu	Glu	Asp	Glu	Phe	Thr	Pro	Phe	Asp
3545						3550					3555			

Val	Val	Arg	Gln	Cys	Ser	Gly	Val	Thr	Phe	Gln	Ser	Ala	Val	Lys
3560						3565					3570			
Arg	Thr	Ile	Lys	Gly	Thr	His	His	Trp	Leu	Leu	Leu	Thr	Ile	Leu
3575						3580					3585			
Thr	Ser	Leu	Leu	Val	Leu	Val	Gln	Ser	Thr	Gln	Trp	Ser	Leu	Phe
3590						3595					3600			
Phe	Phe	Leu	Tyr	Glu	Asn	Ala	Phe	Leu	Pro	Phe	Ala	Met	Gly	Ile
3605						3610					3615			
Ile	Ala	Met	Ser	Ala	Phe	Ala	Met	Met	Phe	Val	Lys	His	Lys	His
3620						3625					3630			
Ala	Phe	Leu	Cys	Leu	Phe	Leu	Leu	Pro	Ser	Leu	Ala	Thr	Val	Ala
3635						3640					3645			
Tyr	Phe	Asn	Met	Val	Tyr	Met	Pro	Ala	Ser	Trp	Val	Met	Arg	Ile
3650						3655					3660			
Met	Thr	Trp	Leu	Asp	Met	Val	Asp	Thr	Ser	Leu	Ser	Gly	Phe	Lys
3665						3670					3675			
Leu	Lys	Asp	Cys	Val	Met	Tyr	Ala	Ser	Ala	Val	Val	Leu	Leu	Ile
3680						3685					3690			
Leu	Met	Thr	Ala	Arg	Thr	Val	Tyr	Asp	Asp	Gly	Ala	Arg	Arg	Val
3695						3700					3705			
Trp	Thr	Leu	Met	Asn	Val	Leu	Thr	Leu	Val	Tyr	Lys	Val	Tyr	Tyr
3710						3715					3720			
Gly	Asn	Ala	Leu	Asp	Gln	Ala	Ile	Ser	Met	Trp	Ala	Leu	Ile	Ile
3725						3730					3735			
Ser	Val	Thr	Ser	Asn	Tyr	Ser	Gly	Val	Val	Thr	Thr	Val	Met	Phe
3740						3745					3750			
Leu	Ala	Arg	Gly	Ile	Val	Phe	Met	Cys	Val	Glu	Tyr	Cys	Pro	Ile
3755						3760					3765			

Phe	Phe	Ile	Thr	Gly	Asn	Thr	Leu	Gln	Cys	Ile	Met	Leu	Val	Tyr
3770						3775					3780			
Cys	Phe	Leu	Gly	Tyr	Phe	Cys	Thr	Cys	Tyr	Phe	Gly	Leu	Phe	Cys
3785						3790					3795			
Leu	Leu	Asn	Arg	Tyr	Phe	Arg	Leu	Thr	Leu	Gly	Val	Tyr	Asp	Tyr
3800						3805					3810			
Leu	Val	Ser	Thr	Gln	Glu	Phe	Arg	Tyr	Met	Asn	Ser	Gln	Gly	Leu
3815						3820					3825			
Leu	Pro	Pro	Lys	Asn	Ser	Ile	Asp	Ala	Phe	Lys	Leu	Asn	Ile	Lys
3830						3835					3840			
Leu	Leu	Gly	Val	Gly	Gly	Lys	Pro	Cys	Ile	Lys	Val	Ala	Thr	Val
3845						3850					3855			
Gln	Ser	Lys	Met	Ser	Asp	Val	Lys	Cys	Thr	Ser	Val	Val	Leu	Leu
3860						3865					3870			
Ser	Val	Leu	Gln	Gln	Leu	Arg	Val	Glu	Ser	Ser	Ser	Lys	Leu	Trp
3875						3880					3885			
Ala	Gln	Cys	Val	Gln	Leu	His	Asn	Asp	Ile	Leu	Leu	Ala	Lys	Asp
3890						3895					3900			
Thr	Thr	Glu	Ala	Phe	Glu	Lys	Met	Val	Ser	Leu	Leu	Ser	Val	Leu
3905						3910					3915			
Leu	Ser	Met	Gln	Gly	Ala	Val	Asp	Ile	Asn	Lys	Leu	Cys	Glu	Glu
3920						3925					3930			
Met	Leu	Asp	Asn	Arg	Ala	Thr	Leu	Gln	Ala	Ile	Ala	Ser	Glu	Phe
3935						3940					3945			
Ser	Ser	Leu	Pro	Ser	Tyr	Ala	Ala	Phe	Ala	Thr	Ala	Gln	Glu	Ala
3950						3955					3960			

Tyr	Glu	Gln	Ala	Val	Ala	Asn	Gly	Asp	Ser	Glu	Val	Val	Leu	Lys
3965						3970					3975			
Lys	Leu	Lys	Lys	Ser	Leu	Asn	Val	Ala	Lys	Ser	Glu	Phe	Asp	Arg
3980						3985					3990			
Asp	Ala	Ala	Met	Gln	Arg	Lys	Leu	Glu	Lys	Met	Ala	Asp	Gln	Ala
3995						4000					4005			
Met	Thr	Gln	Met	Tyr	Lys	Gln	Ala	Arg	Ser	Glu	Asp	Lys	Arg	Ala
4010						4015					4020			
Lys	Val	Thr	Ser	Ala	Met	Gln	Thr	Met	Leu	Phe	Thr	Met	Leu	Arg
4025						4030					4035			
Lys	Leu	Asp	Asn	Asp	Ala	Leu	Asn	Asn	Ile	Ile	Asn	Asn	Ala	Arg
4040						4045					4050			
Asp	Gly	Cys	Val	Pro	Leu	Asn	Ile	Ile	Pro	Leu	Thr	Thr	Ala	Ala
4055						4060					4065			
Lys	Leu	Met	Val	Val	Ile	Pro	Asp	Tyr	Asn	Thr	Tyr	Lys	Asn	Thr
4070						4075					4080			
Cys	Asp	Gly	Thr	Thr	Phe	Thr	Tyr	Ala	Ser	Ala	Leu	Trp	Glu	Ile
4085						4090					4095			
Gln	Gln	Val	Val	Asp	Ala	Asp	Ser	Lys	Ile	Val	Gln	Leu	Ser	Glu
4100						4105					4110			
Ile	Ser	Met	Asp	Asn	Ser	Pro	Asn	Leu	Ala	Trp	Pro	Leu	Ile	Val
4115						4120					4125			
Thr	Ala	Leu	Arg	Ala	Asn	Ser	Ala	Val	Lys	Leu	Gln	Asn	Asn	Glu
4130						4135					4140			
Leu	Ser	Pro	Val	Ala	Leu	Arg	Gln	Met	Ser	Cys	Ala	Ala	Gly	Thr
4145						4150					4155			
Thr	Gln	Thr	Ala	Cys	Thr	Asp	Asp	Asn	Ala	Leu	Ala	Tyr	Tyr	Asn
4160						4165					4170			

Thr	Thr	Lys	Gly	Gly	Arg	Phe	Val	Leu	Ala	Leu	Leu	Ser	Asp	Leu
4175						4180					4185			
Gln	Asp	Leu	Lys	Trp	Ala	Arg	Phe	Pro	Lys	Ser	Asp	Gly	Thr	Gly
4190						4195					4200			
Thr	Ile	Tyr	Thr	Glu	Leu	Glu	Pro	Pro	Cys	Arg	Phe	Val	Thr	Asp
4205						4210					4215			
Thr	Pro	Lys	Gly	Pro	Lys	Val	Lys	Tyr	Leu	Tyr	Phe	Ile	Lys	Gly
4220						4225					4230			
Leu	Asn	Asn	Leu	Asn	Arg	Gly	Met	Val	Leu	Gly	Ser	Leu	Ala	Ala
4235						4240					4245			
Thr	Val	Arg	Leu	Gln	Ala	Gly	Asn	Ala	Thr	Glu	Val	Pro	Ala	Asn
4250						4255					4260			
Ser	Thr	Val	Leu	Ser	Phe	Cys	Ala	Phe	Ala	Val	Asp	Ala	Ala	Lys
4265						4270					4275			
Ala	Tyr	Lys	Asp	Tyr	Leu	Ala	Ser	Gly	Gly	Gln	Pro	Ile	Thr	Asn
4280						4285					4290			
Cys	Val	Lys	Met	Leu	Cys	Thr	His	Thr	Gly	Thr	Gly	Gln	Ala	Ile
4295						4300					4305			
Thr	Val	Thr	Pro	Glu	Ala	Asn	Met	Asp	Gln	Glu	Ser	Phe	Gly	Gly
4310						4315					4320			
Ala	Ser	Cys	Cys	Leu	Tyr	Cys	Arg	Cys	His	Ile	Asp	His	Pro	Asn
4325						4330					4335			
Pro	Lys	Gly	Phe	Cys	Asp	Leu	Lys	Gly	Lys	Tyr	Val	Gln	Ile	Pro
4340						4345					4350			
Thr	Thr	Cys	Ala	Asn	Asp	Pro	Val	Gly	Phe	Thr	Leu	Lys	Asn	Thr
4355						4360					4365			

Val Cys Thr Val Cys Gly Met Trp Lys Gly Tyr Gly Cys Ser Cys
 4370 4375 4380

Asp Gln Leu Arg Glu Pro Met Leu Gln Ser Ala Asp Ala Gln Ser
 4385 4390 4395

Phe Leu Asn Gly Phe Ala Val
 4400 4405

<210> 328

<211> 275

<212> PRT

<213> Severe acute respiratory syndrome coronavirus 2

<400> 328

Met Asp Leu Phe Met Arg Ile Phe Thr Ile Gly Thr Val Thr Leu Lys
 1 5 10 15

Gln Gly Glu Ile Lys Asp Ala Thr Pro Ser Asp Phe Val Arg Ala Thr
 20 25 30

Ala Thr Ile Pro Ile Gln Ala Ser Leu Pro Phe Gly Trp Leu Ile Val
 35 40 45

Gly Val Ala Leu Leu Ala Val Phe Gln Ser Ala Ser Lys Ile Ile Thr
 50 55 60

Leu Lys Lys Arg Trp Gln Leu Ala Leu Ser Lys Gly Val His Phe Val
 65 70 75 80

Cys Asn Leu Leu Leu Leu Phe Val Thr Val Tyr Ser His Leu Leu Leu
 85 90 95

Val Ala Ala Gly Leu Glu Ala Pro Phe Leu Tyr Leu Tyr Ala Leu Val
 100 105 110

Tyr Phe Leu Gln Ser Ile Asn Phe Val Arg Ile Ile Met Arg Leu Trp
 115 120 125

Leu Cys Trp Lys Cys Arg Ser Lys Asn Pro Leu Leu Tyr Asp Ala Asn
 130 135 140

Tyr Phe Leu Cys Trp His Thr Asn Cys Tyr Asp Tyr Cys Ile Pro Tyr
 145 150 155 160

Asn Ser Val Thr Ser Ser Ile Val Ile Thr Ser Gly Asp Gly Thr Thr
 165 170 175

Ser Pro Ile Ser Glu His Asp Tyr Gln Ile Gly Gly Tyr Thr Glu Lys
 180 185 190

Trp Glu Ser Gly Val Lys Asp Cys Val Val Leu His Ser Tyr Phe Thr
 195 200 205

Ser Asp Tyr Tyr Gln Leu Tyr Ser Thr Gln Leu Ser Thr Asp Thr Gly
 210 215 220

Val Glu His Val Thr Phe Phe Ile Tyr Asn Lys Ile Val Asp Glu Pro
 225 230 235 240

Glu Glu His Val Gln Ile His Thr Ile Asp Gly Ser Ser Gly Val Val
 245 250 255

Asn Pro Val Met Glu Pro Ile Tyr Asp Glu Pro Thr Thr Thr Thr Ser
 260 265 270

Val Pro Leu
 275

<210> 329

<211> 75

<212> PRT

<213> Severe acute respiratory syndrome coronavirus 2

<400> 329

Met Tyr Ser Phe Val Ser Glu Glu Thr Gly Thr Leu Ile Val Asn Ser
 1 5 10 15

Val Leu Leu Phe Leu Ala Phe Val Val Phe Leu Leu Val Thr Leu Ala
 20 25 30

Ile Leu Thr Ala Leu Arg Leu Cys Ala Tyr Cys Cys Asn Ile Val Asn
 35 40 45

Val Ser Leu Val Lys Pro Ser Phe Tyr Val Tyr Ser Arg Val Lys Asn
 50 55 60

Leu Asn Ser Ser Arg Val Pro Asp Leu Leu Val
 65 70 75

<210> 330

<211> 222

<212> PRT

<213> Severe acute respiratory syndrome coronavirus 2

<400> 330

Met Ala Asp Ser Asn Gly Thr Ile Thr Val Glu Glu Leu Lys Lys Leu
 1 5 10 15

Leu Glu Gln Trp Asn Leu Val Ile Gly Phe Leu Phe Leu Thr Trp Ile
 20 25 30

Cys Leu Leu Gln Phe Ala Tyr Ala Asn Arg Asn Arg Phe Leu Tyr Ile
 35 40 45

Ile Lys Leu Ile Phe Leu Trp Leu Leu Trp Pro Val Thr Leu Ala Cys
 50 55 60

Phe Val Leu Ala Ala Val Tyr Arg Ile Asn Trp Ile Thr Gly Gly Ile
 65 70 75 80

Ala Ile Ala Met Ala Cys Leu Val Gly Leu Met Trp Leu Ser Tyr Phe
 85 90 95

Ile Ala Ser Phe Arg Leu Phe Ala Arg Thr Arg Ser Met Trp Ser Phe
 100 105 110

Asn Pro Glu Thr Asn Ile Leu Leu Asn Val Pro Leu His Gly Thr Ile
 115 120 125

Leu Thr Arg Pro Leu Leu Glu Ser Glu Leu Val Ile Gly Ala Val Ile
 130 135 140

Leu Arg Gly His Leu Arg Ile Ala Gly His His Leu Gly Arg Cys Asp
 145 150 155 160

Ile Lys Asp Leu Pro Lys Glu Ile Thr Val Ala Thr Ser Arg Thr Leu
165 170 175

Ser Tyr Tyr Lys Leu Gly Ala Ser Gln Arg Val Ala Gly Asp Ser Gly
180 185 190

Phe Ala Ala Tyr Ser Arg Tyr Arg Ile Gly Asn Tyr Lys Leu Asn Thr
195 200 205

Asp His Ser Ser Ser Ser Asp Asn Ile Ala Leu Leu Val Gln
210 215 220

<210> 331

<211> 61

<212> PRT

<213> Severe acute respiratory syndrome coronavirus 2

<400> 331

Met Phe His Leu Val Asp Phe Gln Val Thr Ile Ala Glu Ile Leu Leu
1 5 10 15

Ile Ile Met Arg Thr Phe Lys Val Ser Ile Trp Asn Leu Asp Tyr Ile
20 25 30

Ile Asn Leu Ile Ile Lys Asn Leu Ser Lys Ser Leu Thr Glu Asn Lys
35 40 45

Tyr Ser Gln Leu Asp Glu Glu Gln Pro Met Glu Ile Asp
50 55 60

<210> 332

<211> 121

<212> PRT

<213> Severe acute respiratory syndrome coronavirus 2

<400> 332

Met Lys Ile Ile Leu Phe Leu Ala Leu Ile Thr Leu Ala Thr Cys Glu
1 5 10 15

Leu Tyr His Tyr Gln Glu Cys Val Arg Gly Thr Thr Val Leu Leu Lys
20 25 30

Glu Pro Cys Ser Ser Gly Thr Tyr Glu Gly Asn Ser Pro Phe His Pro
35 40 45

Leu Ala Asp Asn Lys Phe Ala Leu Thr Cys Phe Ser Thr Gln Phe Ala
50 55 60

Phe Ala Cys Pro Asp Gly Val Lys His Val Tyr Gln Leu Arg Ala Arg
65 70 75 80

Ser Val Ser Pro Lys Leu Phe Ile Arg Gln Glu Glu Val Gln Glu Leu
85 90 95

Tyr Ser Pro Ile Phe Leu Ile Val Ala Ala Ile Val Phe Ile Thr Leu
100 105 110

Cys Phe Thr Leu Lys Arg Lys Thr Glu
115 120

<210> 333

<211> 43

<212> PRT

<213> Severe acute respiratory syndrome coronavirus 2

<400> 333

Met Ile Glu Leu Ser Leu Ile Asp Phe Tyr Leu Cys Phe Leu Ala Phe
1 5 10 15

Leu Leu Phe Leu Val Leu Ile Met Leu Ile Ile Phe Trp Phe Ser Leu
20 25 30

Glu Leu Gln Asp His Asn Glu Thr Cys His Ala
35 40

<210> 334

<211> 121

<212> PRT

<213> Severe acute respiratory syndrome coronavirus 2

<400> 334

Met Lys Phe Leu Val Phe Leu Gly Ile Ile Thr Thr Val Ala Ala Phe
1 5 10 15

His Gln Glu Cys Ser Leu Gln Ser Cys Thr Gln His Gln Pro Tyr Val
20 25 30

Val Asp Asp Pro Cys Pro Ile His Phe Tyr Ser Lys Trp Tyr Ile Arg
 35 40 45

Val Gly Ala Arg Lys Ser Ala Pro Leu Ile Glu Leu Cys Val Asp Glu
 50 55 60

Ala Gly Ser Lys Ser Pro Ile Gln Tyr Ile Asp Ile Gly Asn Tyr Thr
 65 70 75 80

Val Ser Cys Leu Pro Phe Thr Ile Asn Cys Gln Glu Pro Lys Leu Gly
 85 90 95

Ser Leu Val Val Arg Cys Ser Phe Tyr Glu Asp Phe Leu Glu Tyr His
 100 105 110

Asp Val Arg Val Val Leu Asp Phe Ile
 115 120

<210> 335

<211> 419

<212> PRT

<213> Severe acute respiratory syndrome coronavirus 2

<400> 335

Met Ser Asp Asn Gly Pro Gln Asn Gln Arg Asn Ala Pro Arg Ile Thr
 1 5 10 15

Phe Gly Gly Pro Ser Asp Ser Thr Gly Ser Asn Gln Asn Gly Glu Arg
 20 25 30

Ser Gly Ala Arg Ser Lys Gln Arg Arg Pro Gln Gly Leu Pro Asn Asn
 35 40 45

Thr Ala Ser Trp Phe Thr Ala Leu Thr Gln His Gly Lys Glu Asp Leu
 50 55 60

Lys Phe Pro Arg Gly Gln Gly Val Pro Ile Asn Thr Asn Ser Ser Pro
 65 70 75 80

Asp Asp Gln Ile Gly Tyr Tyr Arg Arg Ala Thr Arg Arg Ile Arg Gly
 85 90 95

Gly Asp Gly Lys Met Lys Asp Leu Ser Pro Arg Trp Tyr Phe Tyr Tyr
100 105 110

Leu Gly Thr Gly Pro Glu Ala Gly Leu Pro Tyr Gly Ala Asn Lys Asp
115 120 125

Gly Ile Ile Trp Val Ala Thr Glu Gly Ala Leu Asn Thr Pro Lys Asp
130 135 140

His Ile Gly Thr Arg Asn Pro Ala Asn Asn Ala Ala Ile Val Leu Gln
145 150 155 160

Leu Pro Gln Gly Thr Thr Leu Pro Lys Gly Phe Tyr Ala Glu Gly Ser
165 170 175

Arg Gly Gly Ser Gln Ala Ser Ser Arg Ser Ser Ser Arg Ser Arg Asn
180 185 190

Ser Ser Arg Asn Ser Thr Pro Gly Ser Ser Arg Gly Thr Ser Pro Ala
195 200 205

Arg Met Ala Gly Asn Gly Gly Asp Ala Ala Leu Ala Leu Leu Leu Leu
210 215 220

Asp Arg Leu Asn Gln Leu Glu Ser Lys Met Ser Gly Lys Gly Gln Gln
225 230 235 240

Gln Gln Gly Gln Thr Val Thr Lys Lys Ser Ala Ala Glu Ala Ser Lys
245 250 255

Lys Pro Arg Gln Lys Arg Thr Ala Thr Lys Ala Tyr Asn Val Thr Gln
260 265 270

Ala Phe Gly Arg Arg Gly Pro Glu Gln Thr Gln Gly Asn Phe Gly Asp
275 280 285

Gln Glu Leu Ile Arg Gln Gly Thr Asp Tyr Lys His Trp Pro Gln Ile
290 295 300

Ala Gln Phe Ala Pro Ser Ala Ser Ala Phe Phe Gly Met Ser Arg Ile
305 310 315 320

Gly Met Glu Val Thr Pro Ser Gly Thr Trp Leu Thr Tyr Thr Gly Ala
 325 330 335

Ile Lys Leu Asp Asp Lys Asp Pro Asn Phe Lys Asp Gln Val Ile Leu
 340 345 350

Leu Asn Lys His Ile Asp Ala Tyr Lys Thr Phe Pro Pro Thr Glu Pro
 355 360 365

Lys Lys Asp Lys Lys Lys Lys Ala Asp Glu Thr Gln Ala Leu Pro Gln
 370 375 380

Arg Gln Lys Lys Gln Gln Thr Val Thr Leu Leu Pro Ala Ala Asp Leu
 385 390 395 400

Asp Asp Phe Ser Lys Gln Leu Gln Gln Ser Met Ser Ser Ala Asp Ser
 405 410 415

Thr Gln Ala

<210> 336

<211> 38

<212> PRT

<213> Severe acute respiratory syndrome coronavirus 2

<400> 336

Met Gly Tyr Ile Asn Val Phe Ala Phe Pro Phe Thr Ile Tyr Ser Leu
 1 5 10 15

Leu Leu Cys Arg Met Asn Ser Arg Asn Tyr Ile Ala Gln Val Asp Val
 20 25 30

Val Asn Phe Asn Leu Thr
 35

<210> 337

<211> 329

<212> PRT

<213> Unknown

<220>

<221> source
<223> /note="Description of Unknown:
BCSP31 sequence"

<400> 337

Met Lys Phe Gly Ser Lys Ile Arg Arg Leu Ala Val Ala Ala Val Ala
1 5 10 15

Gly Ala Ile Ala Leu Gly Ala Ser Phe Ala Val Ala Gln Ala Pro Thr
20 25 30

Phe Phe Arg Ile Gly Thr Gly Gly Thr Ala Gly Thr Tyr Tyr Pro Ile
35 40 45

Gly Gly Leu Ile Ala Asn Ala Ile Ser Gly Ala Gly Glu Lys Gly Val
50 55 60

Pro Gly Leu Val Ala Thr Ala Val Ser Ser Asn Gly Ser Val Ala Asn
65 70 75 80

Ile Asn Ala Ile Lys Ser Gly Ala Leu Glu Ser Gly Phe Thr Gln Ser
85 90 95

Asp Val Ala Tyr Trp Ala Tyr Asn Gly Thr Gly Leu Tyr Asp Gly Lys
100 105 110

Gly Lys Val Glu Asp Leu Arg Leu Leu Ala Thr Leu Tyr Pro Glu Thr
115 120 125

Ile His Ile Val Ala Arg Lys Asp Ala Asn Ile Lys Ser Val Ala Asp
130 135 140

Leu Lys Gly Lys Arg Val Ser Leu Asp Glu Pro Gly Ser Gly Thr Ile
145 150 155 160

Val Asp Ala Arg Ile Val Leu Glu Ala Tyr Gly Leu Thr Glu Asp Asp
165 170 175

Ile Lys Ala Glu His Leu Lys Pro Gly Pro Ala Gly Glu Arg Leu Lys
180 185 190

Asp Gly Ala Leu Asp Ala Tyr Phe Phe Val Gly Gly Tyr Pro Thr Gly

195	200	205
Ala Ile Ser Glu Leu Ala	Ile Ser Asn Gly Ile Ser	Leu Val Pro Ile
210	215	220
Ser Gly Pro Glu Ala Asp	Lys Ile Leu Glu Lys Tyr	Ser Phe Phe Ser
225	230	235 240
Lys Asp Val Val Pro Ala	Gly Ala Tyr Lys Asp Val	Ala Glu Thr Pro
	245	250 255
Thr Leu Ala Val Ala Ala	Gln Trp Val Thr Ser Ala	Lys Gln Pro Asp
	260	265 270
Asp Leu Ile Tyr Asn Ile	Thr Lys Val Leu Trp Asn	Glu Asp Thr Arg
	275	280 285
Lys Ala Leu Asp Ala Gly	His Ala Lys Gly Lys Leu	Ile Lys Leu Asp
	290	295 300
Ser Ala Thr Ser Ser Leu	Gly Ile Pro Leu His Pro	Gly Ala Glu Arg
	305	310 315 320
Phe Tyr Lys Glu Ala Gly	Val Leu Lys	
	325	

<210> 338
 <211> 402
 <212> PRT
 <213> Unknown

<220>
 <221> source
 <223> /note="Description of Unknown:
 MOMP sequence"

<400> 338
 Met Lys Lys Leu Leu Lys Ser Ala Leu Leu Phe Ala Ala Thr Gly Ser
 1 5 10 15

Ala Leu Ser Leu Gln Ala Leu Pro Val Gly Asn Pro Ala Glu Pro Ser
 20 25 30

Leu Leu Ile Asp Gly Thr Met Trp Glu Gly Ala Ser Gly Asp Pro Cys
35 40 45

Asp Pro Cys Ala Thr Trp Cys Asp Ala Ile Ser Ile Arg Ala Gly Tyr
50 55 60

Tyr Gly Asp Tyr Val Phe Asp Arg Val Leu Lys Val Asp Val Asn Lys
65 70 75 80

Thr Phe Ser Gly Met Ala Ala Thr Pro Thr Gln Ala Thr Gly Asn Ala
85 90 95

Ser Asn Thr Asn Gln Pro Glu Ala Asn Gly Arg Pro Asn Ile Ala Tyr
100 105 110

Gly Arg His Met Gln Asp Ala Glu Trp Phe Ser Asn Ala Ala Phe Leu
115 120 125

Ala Leu Asn Ile Trp Asp Arg Phe Asp Ile Phe Cys Thr Leu Gly Ala
130 135 140

Ser Asn Gly Tyr Phe Lys Ala Ser Ser Ala Ala Phe Asn Leu Val Gly
145 150 155 160

Leu Ile Gly Phe Ser Ala Ala Ser Ser Ile Ser Thr Asp Leu Pro Met
165 170 175

Gln Leu Pro Asn Val Gly Ile Thr Gln Gly Val Val Glu Phe Tyr Thr
180 185 190

Asp Thr Ser Phe Ser Trp Ser Val Gly Ala Arg Gly Ala Leu Trp Glu
195 200 205

Cys Gly Cys Ala Thr Leu Gly Ala Glu Phe Gln Tyr Ala Gln Ser Asn
210 215 220

Pro Lys Ile Glu Met Leu Asn Val Thr Ser Ser Pro Ala Gln Phe Val
225 230 235 240

Ile His Lys Pro Arg Gly Tyr Lys Gly Ala Ser Ser Asn Phe Pro Leu
245 250 255

Pro Ile Thr Ala Gly Thr Thr Glu Ala Thr Asp Thr Lys Ser Ala Thr
260 265 270

Ile Lys Tyr His Glu Trp Gln Val Gly Leu Ala Leu Ser Tyr Arg Leu
275 280 285

Asn Met Leu Val Pro Tyr Ile Gly Val Asn Trp Ser Arg Ala Thr Phe
290 295 300

Asp Ala Asp Thr Ile Arg Ile Ala Gln Pro Lys Leu Lys Ser Glu Ile
305 310 315 320

Leu Asn Ile Thr Thr Trp Asn Pro Ser Leu Ile Gly Ser Thr Thr Ala
325 330 335

Leu Pro Asn Asn Ser Gly Lys Asp Val Leu Ser Asp Val Leu Gln Ile
340 345 350

Ala Ser Ile Gln Ile Asn Lys Met Lys Ser Arg Lys Ala Cys Gly Val
355 360 365

Ala Val Gly Ala Thr Leu Ile Asp Ala Asp Lys Trp Ser Ile Thr Gly
370 375 380

Glu Ala Arg Leu Ile Asn Glu Arg Ala Ala His Met Asn Ala Gln Phe
385 390 395 400

Arg Phe

<210> 339

<211> 498

<212> PRT

<213> Unknown

<220>

<221> source

<223> /note="Description of Unknown:
Flagellin sequence"

<400> 339

Met Ala Gln Val Ile Asn Thr Asn Ser Leu Ser Leu Ile Thr Gln Asn

1	5	10	15
Asn Ile Asn Lys Asn Gln Ser Ala Leu Ser Ser Ser Ile Glu Arg Leu	20	25	30
Ser Ser Gly Leu Arg Ile Asn Ser Ala Lys Asp Asp Ala Ala Gly Gln	35	40	45
Ala Ile Ala Asn Arg Phe Thr Ser Asn Ile Lys Gly Leu Thr Gln Ala	50	55	60
Ala Arg Asn Ala Asn Asp Gly Ile Ser Val Ala Gln Thr Thr Glu Gly	65	70	75
Ala Leu Ser Glu Ile Asn Asn Asn Leu Gln Arg Val Arg Glu Leu Thr	85	90	95
Val Gln Ala Thr Thr Gly Thr Asn Ser Glu Ser Asp Leu Ser Ser Ile	100	105	110
Gln Asp Glu Ile Lys Ser Arg Leu Asp Glu Ile Asp Arg Val Ser Gly	115	120	125
Gln Thr Gln Phe Asn Gly Val Asn Val Leu Ala Lys Asn Gly Ser Met	130	135	140
Lys Ile Gln Val Gly Ala Asn Asp Asn Gln Thr Ile Thr Ile Asp Leu	145	150	155
Lys Gln Ile Asp Ala Lys Thr Leu Gly Leu Asp Gly Phe Ser Val Lys	165	170	175
Asn Asn Asp Thr Val Thr Thr Ser Ala Pro Val Thr Ala Phe Gly Ala	180	185	190
Thr Thr Thr Asn Asn Ile Lys Leu Thr Gly Ile Thr Leu Ser Thr Glu	195	200	205
Ala Ala Thr Asp Thr Gly Gly Thr Asn Pro Ala Ser Ile Glu Gly Val	210	215	220

Tyr Thr Asp Asn Gly Asn Asp Tyr Tyr Ala Lys Ile Thr Gly Gly Asp
 225 230 235 240

Asn Asp Gly Lys Tyr Tyr Ala Val Thr Val Ala Asn Asp Gly Thr Val
 245 250 255

Thr Met Ala Thr Gly Ala Thr Ala Asn Ala Thr Val Thr Asp Ala Asn
 260 265 270

Thr Thr Lys Ala Thr Thr Ile Thr Ser Gly Gly Thr Pro Val Gln Ile
 275 280 285

Asp Asn Thr Ala Gly Ser Ala Thr Ala Asn Leu Gly Ala Val Ser Leu
 290 295 300

Val Lys Leu Gln Asp Ser Lys Gly Asn Asp Thr Asp Thr Tyr Ala Leu
 305 310 315 320

Lys Asp Thr Asn Gly Asn Leu Tyr Ala Ala Asp Val Asn Glu Thr Thr
 325 330 335

Gly Ala Val Ser Val Lys Thr Ile Thr Tyr Thr Asp Ser Ser Gly Ala
 340 345 350

Ala Ser Ser Pro Thr Ala Val Lys Leu Gly Gly Asp Asp Gly Lys Thr
 355 360 365

Glu Val Val Asp Ile Asp Gly Lys Thr Tyr Asp Ser Ala Asp Leu Asn
 370 375 380

Gly Gly Asn Leu Gln Thr Gly Leu Thr Ala Gly Gly Glu Ala Leu Thr
 385 390 395 400

Ala Val Ala Asn Gly Lys Thr Thr Asp Pro Leu Lys Ala Leu Asp Asp
 405 410 415

Ala Ile Ala Ser Val Asp Lys Phe Arg Ser Ser Leu Gly Ala Val Gln
 420 425 430

Asn Arg Leu Asp Ser Ala Val Thr Asn Leu Asn Asn Thr Thr Thr Asn

435 440 445
 Leu Ser Glu Ala Gln Ser Arg Ile Gln Asp Ala Asp Tyr Ala Thr Glu
 450 455 460
 Val Ser Asn Met Ser Lys Ala Gln Ile Ile Gln Gln Ala Gly Asn Ser
 465 470 475 480
 Val Leu Ala Lys Ala Asn Gln Val Pro Gln Gln Val Leu Ser Leu Leu
 485 490 495

 Gln Gly

 <210> 340
 <211> 189
 <212> PRT
 <213> Homo sapiens

 <400> 340
 Met Ala Ser Pro Phe Ala Leu Leu Met Val Leu Val Val Leu Ser Cys
 1 5 10 15

 Lys Ser Ser Cys Ser Leu Gly Cys Asp Leu Pro Glu Thr His Ser Leu
 20 25 30

 Asp Asn Arg Arg Thr Leu Met Leu Leu Ala Gln Met Ser Arg Ile Ser
 35 40 45

 Pro Ser Ser Cys Leu Met Asp Arg His Asp Phe Gly Phe Pro Gln Glu
 50 55 60

 Glu Phe Asp Gly Asn Gln Phe Gln Lys Ala Pro Ala Ile Ser Val Leu
 65 70 75 80

 His Glu Leu Ile Gln Gln Ile Phe Asn Leu Phe Thr Thr Lys Asp Ser
 85 90 95

 Ser Ala Ala Trp Asp Glu Asp Leu Leu Asp Lys Phe Cys Thr Glu Leu
 100 105 110

 Tyr Gln Gln Leu Asn Asp Leu Glu Ala Cys Val Met Gln Glu Glu Arg

115 120 125
 Val Gly Glu Thr Pro Leu Met Asn Ala Asp Ser Ile Leu Ala Val Lys
 130 135 140
 Lys Tyr Phe Arg Arg Ile Thr Leu Tyr Leu Thr Glu Lys Lys Tyr Ser
 145 150 155 160
 Pro Cys Ala Trp Glu Val Val Arg Ala Glu Ile Met Arg Ser Leu Ser
 165 170 175
 Leu Ser Thr Asn Leu Gln Glu Arg Leu Arg Arg Lys Glu
 180 185

 <210> 341
 <211> 166
 <212> PRT
 <213> Homo sapiens

 <400> 341
 Met Lys Tyr Thr Ser Tyr Ile Leu Ala Phe Gln Leu Cys Ile Val Leu
 1 5 10 15

 Gly Ser Leu Gly Cys Tyr Cys Gln Asp Pro Tyr Val Lys Glu Ala Glu
 20 25 30

 Asn Leu Lys Lys Tyr Phe Asn Ala Gly His Ser Asp Val Ala Asp Asn
 35 40 45

 Gly Thr Leu Phe Leu Gly Ile Leu Lys Asn Trp Lys Glu Glu Ser Asp
 50 55 60

 Arg Lys Ile Met Gln Ser Gln Ile Val Ser Phe Tyr Phe Lys Leu Phe
 65 70 75 80

 Lys Asn Phe Lys Asp Asp Gln Ser Ile Gln Lys Ser Val Glu Thr Ile
 85 90 95

 Lys Glu Asp Met Asn Val Lys Phe Phe Asn Ser Asn Lys Lys Lys Arg
 100 105 110

 Asp Asp Phe Glu Lys Leu Thr Asn Tyr Ser Val Thr Asp Leu Asn Val

115		120		125
Gln Arg Lys Ala Ile His	Glu Leu Ile Gln Val	Met Ala Glu Leu Ser		
130	135	140		
Pro Ala Ala Lys Thr Gly	Lys Arg Lys Arg Ser	Gln Met Leu Phe Arg		
145	150	155	160	
Gly Arg Arg Ala Ser Gln				
	165			
<210> 342				
<211> 153				
<212> PRT				
<213> Homo sapiens				
<400> 342				
Met Tyr Arg Met Gln Leu Leu Ser Cys Ile Ala Leu Ser Leu Ala Leu				
1	5	10	15	
Val Thr Asn Ser Ala Pro Thr Ser Ser Ser Thr Lys Lys Thr Gln Leu				
	20	25	30	
Gln Leu Glu His Leu Leu Leu Asp Leu Gln Met Ile Leu Asn Gly Ile				
	35	40	45	
Asn Asn Tyr Lys Asn Pro Lys Leu Thr Arg Met Leu Thr Phe Lys Phe				
	50	55	60	
Tyr Met Pro Lys Lys Ala Thr Glu Leu Lys His Leu Gln Cys Leu Glu				
65	70	75	80	
Glu Glu Leu Lys Pro Leu Glu Glu Val Leu Asn Leu Ala Gln Ser Lys				
	85	90	95	
Asn Phe His Leu Arg Pro Arg Asp Leu Ile Ser Asn Ile Asn Val Ile				
	100	105	110	
Val Leu Glu Leu Lys Gly Ser Glu Thr Thr Phe Met Cys Glu Tyr Ala				
	115	120	125	
Asp Glu Thr Ala Thr Ile Val Glu Phe Leu Asn Arg Trp Ile Thr Phe				

130	135	140
Cys Gln Ser Ile Ile Ser Thr Leu Thr		
145	150	
<210> 343		
<211> 162		
<212> PRT		
<213> Homo sapiens		
<400> 343		
Met Arg Ile Ser Lys Pro His Leu Arg Ser Ile Ser Ile Gln Cys Tyr		
1	5	10 15
Leu Cys Leu Leu Leu Asn Ser His Phe Leu Thr Glu Ala Gly Ile His		
	20	25 30
Val Phe Ile Leu Gly Cys Phe Ser Ala Gly Leu Pro Lys Thr Glu Ala		
	35	40 45
Asn Trp Val Asn Val Ile Ser Asp Leu Lys Lys Ile Glu Asp Leu Ile		
	50	55 60
Gln Ser Met His Ile Asp Ala Thr Leu Tyr Thr Glu Ser Asp Val His		
65	70	75 80
Pro Ser Cys Lys Val Thr Ala Met Lys Cys Phe Leu Leu Glu Leu Gln		
	85	90 95
Val Ile Ser Leu Glu Ser Gly Asp Ala Ser Ile His Asp Thr Val Glu		
	100	105 110
Asn Leu Ile Ile Leu Ala Asn Asn Ser Leu Ser Ser Asn Gly Asn Val		
	115	120 125
Thr Glu Ser Gly Cys Lys Glu Cys Glu Glu Leu Glu Glu Lys Asn Ile		
	130	135 140
Lys Glu Phe Leu Gln Ser Phe Val His Ile Val Gln Met Phe Ile Asn		
145	150	155 160
Thr Ser		

<210> 344
 <211> 193
 <212> PRT
 <213> Homo sapiens

<400> 344

Met Ala Ala Glu Pro Val Glu Asp Asn Cys Ile Asn Phe Val Ala Met
 1 5 10 15

Lys Phe Ile Asp Asn Thr Leu Tyr Phe Ile Ala Glu Asp Asp Glu Asn
 20 25 30

Leu Glu Ser Asp Tyr Phe Gly Lys Leu Glu Ser Lys Leu Ser Val Ile
 35 40 45

Arg Asn Leu Asn Asp Gln Val Leu Phe Ile Asp Gln Gly Asn Arg Pro
 50 55 60

Leu Phe Glu Asp Met Thr Asp Ser Asp Cys Arg Asp Asn Ala Pro Arg
 65 70 75 80

Thr Ile Phe Ile Ile Ser Met Tyr Lys Asp Ser Gln Pro Arg Gly Met
 85 90 95

Ala Val Thr Ile Ser Val Lys Cys Glu Lys Ile Ser Thr Leu Ser Cys
 100 105 110

Glu Asn Lys Ile Ile Ser Phe Lys Glu Met Asn Pro Pro Asp Asn Ile
 115 120 125

Lys Asp Thr Lys Ser Asp Ile Ile Phe Phe Gln Arg Ser Val Pro Gly
 130 135 140

His Asp Asn Lys Met Gln Phe Glu Ser Ser Ser Tyr Glu Gly Tyr Phe
 145 150 155 160

Leu Ala Cys Glu Lys Glu Arg Asp Leu Phe Lys Leu Ile Leu Lys Lys
 165 170 175

Glu Asp Glu Leu Gly Asp Arg Ser Ile Met Phe Thr Val Gln Asn Glu

180

185

190

Asp

<210> 345

<211> 235

<212> PRT

<213> Unknown

<220>

<221> source

<223> /note="Description of Unknown:
FLt3-ligand sequence"

<400> 345

Met	Thr	Val	Leu	Ala	Pro	Ala	Trp	Ser	Pro	Thr	Thr	Tyr	Leu	Leu	Leu
1				5					10					15	

Leu	Leu	Leu	Leu	Ser	Ser	Gly	Leu	Ser	Gly	Thr	Gln	Asp	Cys	Ser	Phe
			20					25					30		

Gln	His	Ser	Pro	Ile	Ser	Ser	Asp	Phe	Ala	Val	Lys	Ile	Arg	Glu	Leu
		35					40					45			

Ser	Asp	Tyr	Leu	Leu	Gln	Asp	Tyr	Pro	Val	Thr	Val	Ala	Ser	Asn	Leu
	50					55					60				

Gln	Asp	Glu	Glu	Leu	Cys	Gly	Gly	Leu	Trp	Arg	Leu	Val	Leu	Ala	Gln
65					70					75					80

Arg	Trp	Met	Glu	Arg	Leu	Lys	Thr	Val	Ala	Gly	Ser	Lys	Met	Gln	Gly
			85						90					95	

Leu	Leu	Glu	Arg	Val	Asn	Thr	Glu	Ile	His	Phe	Val	Thr	Lys	Cys	Ala
			100					105					110		

Phe	Gln	Pro	Pro	Pro	Ser	Cys	Leu	Arg	Phe	Val	Gln	Thr	Asn	Ile	Ser
		115					120					125			

Arg	Leu	Leu	Gln	Glu	Thr	Ser	Glu	Gln	Leu	Val	Ala	Leu	Lys	Pro	Trp
	130					135					140				

Ile Thr Arg Gln Asn Phe Ser Arg Cys Leu Glu Leu Gln Cys Gln Pro
 145 150 155 160

Asp Ser Ser Thr Leu Pro Pro Pro Trp Ser Pro Arg Pro Leu Glu Ala
 165 170 175

Thr Ala Pro Thr Ala Pro Gln Pro Pro Leu Leu Leu Leu Leu Leu
 180 185 190

Pro Val Gly Leu Leu Leu Leu Ala Ala Ala Trp Cys Leu His Trp Gln
 195 200 205

Arg Thr Arg Arg Arg Thr Pro Arg Pro Gly Glu Gln Val Pro Pro Val
 210 215 220

Pro Ser Pro Gln Asp Leu Leu Leu Val Glu His
 225 230 235

<210> 346

<211> 448

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 346

Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
 20 25 30

Thr Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35 40 45

Thr Phe Ile Ser Tyr Asp Gly Asn Asn Lys Tyr Tyr Ala Asp Ser Val
 50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
 65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Ile Tyr Tyr Cys
85 90 95

Ala Arg Thr Gly Trp Leu Gly Pro Phe Asp Tyr Trp Gly Gln Gly Thr
100 105 110

Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro
115 120 125

Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly
130 135 140

Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn
145 150 155 160

Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln
165 170 175

Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser
180 185 190

Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser
195 200 205

Asn Thr Lys Val Asp Lys Arg Val Glu Pro Lys Ser Cys Asp Lys Thr
210 215 220

His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser
225 230 235 240

Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg
245 250 255

Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro
260 265 270

Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala
275 280 285

Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val

290		295		300
Ser Val Leu Thr Val	Leu His Gln Asp Trp	Leu Asn Gly Lys Glu Tyr		
305	310	315	320	
Lys Cys Lys Val Ser	Asn Lys Ala Leu Pro Ala Pro	Ile Glu Lys Thr		
	325	330	335	
Ile Ser Lys Ala Lys	Gly Gln Pro Arg Glu Pro	Gln Val Tyr Thr Leu		
	340	345	350	
Pro Pro Ser Arg Asp	Glu Leu Thr Lys Asn Gln Val	Ser Leu Thr Cys		
	355	360	365	
Leu Val Lys Gly Phe Tyr	Pro Ser Asp Ile Ala Val	Glu Trp Glu Ser		
	370	375	380	
Asn Gly Gln Pro Glu	Asn Asn Tyr Lys Thr Thr	Pro Pro Val Leu Asp		
385	390	395	400	
Ser Asp Gly Ser Phe Phe	Leu Tyr Ser Lys Leu Thr Val	Asp Lys Ser		
	405	410	415	
Arg Trp Gln Gln Gly	Asn Val Phe Ser Cys Ser Val	Met His Glu Ala		
	420	425	430	
Leu His Asn His Tyr Thr	Gln Lys Ser Leu Ser Leu	Ser Pro Gly Lys		
	435	440	445	

<210> 347

<211> 440

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 347

Gln Val Gln Leu Val	Glu Ser Gly Gly Gly	Val Val Gln Pro Gly Arg
1	5	10 15

Ser Leu Arg Leu Asp Cys Lys Ala Ser Gly Ile Thr Phe Ser Asn Ser
20 25 30

Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Val Ile Trp Tyr Asp Gly Ser Lys Arg Tyr Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Phe
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Thr Asn Asp Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser
100 105 110

Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser
115 120 125

Arg Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp
130 135 140

Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr
145 150 155 160

Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr
165 170 175

Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Lys
180 185 190

Thr Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp
195 200 205

Lys Arg Val Glu Ser Lys Tyr Gly Pro Pro Cys Pro Pro Cys Pro Ala
210 215 220

Pro Glu Phe Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro
225 230 235 240

Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val
245 250 255

Val Asp Val Ser Gln Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val
260 265 270

Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln
275 280 285

Phe Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln
290 295 300

Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly
305 310 315 320

Leu Pro Ser Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro
325 330 335

Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Gln Glu Glu Met Thr
340 345 350

Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser
355 360 365

Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr
370 375 380

Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr
385 390 395 400

Ser Arg Leu Thr Val Asp Lys Ser Arg Trp Gln Glu Gly Asn Val Phe
405 410 415

Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys
420 425 430

Ser Leu Ser Leu Ser Leu Gly Lys
435 440

<210> 348
 <211> 442
 <212> PRT
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 348
 Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Glu
 1 5 10 15

Ser Leu Arg Ile Ser Cys Lys Gly Ser Gly Tyr Ser Phe Ser Thr Tyr
 20 25 30

Trp Ile Ser Trp Val Arg Gln Met Pro Gly Lys Gly Leu Glu Trp Met
 35 40 45

Gly Lys Ile Tyr Pro Gly Asp Ser Tyr Thr Asn Tyr Ser Pro Ser Phe
 50 55 60

Gln Gly Gln Val Thr Ile Ser Ala Asp Lys Ser Ile Ser Thr Ala Tyr
 65 70 75 80

Leu Gln Trp Ser Ser Leu Lys Ala Ser Asp Thr Ala Met Tyr Tyr Cys
 85 90 95

Ala Arg Gly Tyr Gly Ile Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val
 100 105 110

Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala
 115 120 125

Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu
 130 135 140

Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly
 145 150 155 160

Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser
 165 170 175

Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Asn Phe
180 185 190

Gly Thr Gln Thr Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr
195 200 205

Lys Val Asp Lys Thr Val Glu Arg Lys Cys Cys Val Glu Cys Pro Pro
210 215 220

Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro Pro
225 230 235 240

Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys
245 250 255

Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Gln Phe Asn Trp
260 265 270

Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu
275 280 285

Glu Gln Phe Asn Ser Thr Phe Arg Val Val Ser Val Leu Thr Val Val
290 295 300

His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn
305 310 315 320

Lys Gly Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly
325 330 335

Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu
340 345 350

Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr
355 360 365

Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn
370 375 380

Asn Tyr Lys Thr Thr Pro Pro Met Leu Asp Ser Asp Gly Ser Phe Phe

<400> 351

tataattcta ccctattgag gcattgacta

30