SEQUENCE LISTING

<110> ORNA THERAPEUTICS, INC.

<120> CIRCULAR RNA COMPOSITIONS AND METHODS

<130> OBS-016WO

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<151> 2020-05-19

<160> 351

<170> PatentIn version 3.5

<210> 1
<211> 585
<212> DNA
<213> Unknown

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

<400> 1
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gcgtttgtct atatgttatt ttccaccata ttgccgtctt ttggcaatgt gagggcccgg 120

aaacctggcc ctgtcttctt gacgagcatt cctaggggtc tttcccctct cgccaaagga 180

atgcaaggtc tgttgaatgt cgtgaaggaa gcagttcctc tggaagcttc ttgaagacaa 240

acaacgtctg tagcgaccct ttgcaggcag cggaaccccc cacctggcga caggtgcctc 300

tgcggccaaa agccacgtgt ataagataca cctgcaaagg cggcacaacc ccagtgccac 360

gttgtgagtt ggatagttgt ggaaagagtc aaatggctct cctcaagcgt attcaacaag 420

gggctgaagg atgcccagaa ggtaccccat tgtatgggat ctgatctggg gcctcggtgc 480

acatgcttta catgtgttta gtcgaggtta aaaaacgtct aggcccccccg 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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ttgtctacat gctattttct accgcattac cgtcttatgg taatgtgagg gtccagaacc 120

tgaccctgtc ttcttgacga acactcctag gggtctttcc cctctcgaca aaggagtgta 180

aggtctgttg aatgtcgtga aggaagcagt tcctctggaa gcttcttaaa gacaaacaac 240

gtctgtagcg acccttttgca ggcagcggaa ccccccacct ggtgacaggt gcctctgcgg 300

ccaaaagcca cgtgtataag atacacctgc aaaggcggca caaccccagt gccacgttgt 360

gagttggata gttgtggaaa gagtcaaatg gctctcctca agcgtattca acaaggggct 420

gaaggatgcc cagaaggtac cccattgtat gggatctgat ctggggcctc ggtgcacgtg 480

ctttacacgt gttgagtcga ggtgaaaaaa cgtctaggcc ccccgaacca 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 atagtgccag ggcgggtact gccgtaagtg ccaccccaaa caacaacaac 120

aaaacaaact ccccctcccc ccccttacta tactggccga agccacttgg aataaggccg 180

gtgtgcgttt gtctacatgc tattttctac cgcattaccg tcttatggta atgtgagggt 240

ccagaacctg accctgtctt cttgacgaac actcctaggg gtctttcccc tctcgacaaa 300

ggagtgtaag gtctgttgaa tgtcgtgaag gaagcagttc ctctggaagc ttcttaaaga 360

caaacaacgt ctgtagcgac cctttgcagg cagcggaacc ccccacctgg tgacaggtgc 420

ctctgcggcc aaaagccacg tgtataagat acacctgcaa aggcggcaca accccagtgc 480

cacgttgtga gttggatagt tgtggaaaga gtcaaatggc tctcctcaag cgtattcaac 540

aaggggctga aggatgccca gaaggtaccc cattgtatgg gatctgatct ggggcctcgg 600

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gggacgtggt 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
ttgccagtct gctcgatatc gcaggctggg tccgtgacta cccactcccc ctttcaacgt 60

gaaggctacg atagtgccag ggcgggtact gccgtaagtg ccaccccaaa acaacaacaa 120

ccccccctct ccctcctccc cccctaacgt tactggccga agccgcttgg aataaggccg 180

gtgtgcgttt gtctatatgt tattttccac catattgccg tcttttggca atgtgagggc 240

ccggaaacct ggccctgtct tcttgacgag cattcctagg ggtctttccc ctctcgccaa 300

aggaatgcaa ggtctgttga atgtcgtgaa ggaagcagtt cctctggaag cttcttgaag 360

acaaacaacg tctgtagcga ccctttgcag gcagcggaac cccccacctg gcgacaggtg 420

cctctgcggc caaaagccac gtgtataaga tacacctgca aaggcggcac aaccccagtg 480

ccacgttgtg agttggatag ttgtggaaag agtcaaatgg ctctcctcaa gcgtattcaa 540

caaggggctg aaggatgccc agaaggtacc ccattgtatg ggatctgatc tggggcctcg 600

gtgcacatgc tttacatgtg tttagtcgag gttaaaaaac gtctaggccc cccgaaccac 660

ggggacgtgg ttttcctttg aaaaacacga tgataat 697

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

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

Encephalomyocarditis virus sequence"

<400> 5
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tatgttattt tccaccatat tgccgtcttt tggcaatgtg agggcccgga aacctggccc 120

tgtcttcttg acgagcattc ctaggggtct ttcccctctc gccaaaggaa tgcaaggtct 180

gttgaatgtc gtgaaggaag cagttcctct ggaagcttct tgaagacaaa caacgtctgt 240

agcgaccctt tgcaggcagc ggaacccccc acctggcgac aggtgcctct gcggccaaaa 300

gccacgtgta taagatacac ctgcaaaggc ggcacaaccc cagtgccacg ttgtgagttg 360

gatagttgtg gaaagagtca aatggctctc ctcaagcgta ttcaacaagg ggctgaagga 420

tgcccagaag gtaccccatt gtatgggatc tgatctgggg cctcggtgca catgctttac 480

atgtgtttag tcgaggttaa aaaacgtcta ggcccccccga accacgggga cgtggttttc 540

ctttgaaaaa cacgatgata at 562

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

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

<400> 6
gtaaattaaa tgctatttac aaaatttaaa cagaaaggag agatgttatg aaccggtttt 60

acaaggtttc atacatcgaa aatagcacta cctggggcag ccgacacact aacatcgtct 120

gtttaaccag aagtgttact gaaaggaggt tattta 156

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

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

<400> 7
acctgcccct aatagggggcg acactccgcc atgaatcact cccctgtgag gaactactgt 60

cttcacgcag aaagcgtcta gccatggcgt tagtatgagt gtcgtacagc ctccaggccc 120

ccccctcccg ggagagccat agtggtctgc ggaaccggtg agtacaccgg aattgccggg 180

aagactgggt cctttcttgg ataaacccac tctatgcccg gacatttggg cgtgcccccg 240

caagactgct agccgagtag cgttgggttg cgaaaggcct tgtggtactg 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

ccccaaagat gtcctgaagg taccccgtgt atctgaggat gagcaccatc gactacccgg 120

acctgcaaaa ttttgcaaac gcatgtggta tcccagcccc ctcctctcgg ggagggggct 180

ttgctcactc agcacaggat ctgatcagga gatccacctc cggtgcttta caccggggcg 240

tggatttaaa aattgcccaa ggcctggcgc acaacctagg ggactaggtt 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 ccccgcctac attggcgggg gcttttgaag 60

caccagacac tggatctgat caggaggagg gtagctgctt tacagcccct cttaaaaatt 120

gcccaaggtc cggccaccca acctagggga ctaggttttc cttttatttt 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
acatggggga gactgcatgt ggcagtcttg aaacgtgtgg tttgacgtct accttatatg 60

gcagtgggtg gagtactgca aagatgtcac cgtgctttac acggtttttg aaccccacac 120

cggctgtttg acgctcgtag ggcagcaggt ttattttcat taaaattctt actttctagc 180

tgcatgagtt ctattcatgc agacggagtg atactcccgt tccttcttgg acaggttgcc 240

tccacgccct ttgtggatct taaggtgacc aagtcactgg tgttggaggt gaagatagag 300

agtcctcttg ggaatgtcat gtggctgtgc caggggttgt agcgatgcca ttcgtgtgtg 360

cggatttcct ctcgtggtga cacgagcctc acaggccaaa agccccgtcc gaaaggaccc 420

gaatggtgga gtgaccctga ctccccccctg catagttttg tgattaggaa cttgaggaat 480

ttctgtcata aatctctatc acatcaggcc ccaaagatgt cctgaaggta ccctgtgtat 540

ctgaggatga gcaccaccga ctacccggac ttgcattagc agacacatgt ggttgcccag 600

ccccacctct tcagaggtgg ggctttgctc actcagcaca ggatctgatc aggagccccg 660

ctcgtgtgct ttacactcga cgcggggtta aaaattgccc aaggcctggc acaacaacct 720

aggggactag gttttcctat ttttgtaaat tatgtcaat 759

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

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

<400> 11
gtgacaatca gccagattgt taacggtcaa gcacttctgt ttccccggta cccttgtata 60

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agtagcactt ttgaagccta tggctggtcg ctcaactgtt tacccagcag tagacctggc 180

agatgaggct agatgttccc caccagcgat ggtgatctag cctgcgtggc tgcctgcaca 240

ctctattgag tgtgaagcca gaaagtggac aaggtgtgaa gagcctattg tgctcacttt 300

gagtcctccg gcccctgaat gtggctaatc 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
ttaaaacagc ggatgggtat cccaccattc gacccattgg gtgtagtact ctggtactat 60

gtacctttgt acgcctgttt ctccccaacc acccttcctt aaaattccca cccatgaaac 120

gttagaagct tgacattaaa gtacaatagg tggcgccata tccaatggtg tctatgtaca 180

agcacttctg tttcccagga gcgaggtata ggctgtaccc actgccaaaa gcctttaacc 240

gttatccgcc aaccaactac gtaacagtta gtaccatctt gttcttgact ggacgttcga 300

tcaggtggat tttccctcca ctagtttggt cgatgaggct aggaattccc cacgggtgac 360

cgtgtcctag cctgcgtggc ggccaaccca gcttatgctg ggacgccctt ttaaggacat 420

ggtgtgaaga ctcgcatgtg cttggttgtg 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
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tacggtaact ttgtacgcca gtttttccca cccttcccca taatgtaact tagaagtttg 120

tacaatatga ccaataggtg acaatcatcc agactgtcaa aggtcaagca cttctgtttc 180

cccggtcaat gaggatatgc tttacccaag gcaaaaacct tagagatcgt tatccccaca 240

ctgcctacac agagcccagt accatttttg atataattgg gttggtcgct ccctgcaaac 300

ccagcagtag acctggcaga tgaggctgga cattccccac tggcgacagt ggtccagcct 360

gcgtggctgc ctgctcaccc ttcttgggtg agaagcctaa ttattgacaa ggtgtgaaga 420

gccgcgtgtg ctcagtgtgc ttcctccggc ccctgaatgt ggctaacctt 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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tccggtacac ttgcacgcca gtttgccacc cctcacccgt cgtaacttag aagctaacaa 120

ctcgaccaac aggcggtggt aaaccatacc acttacggtc aagcactcct gtttccccgg 180

tatgcgagga atagactcct acagggttga agcctcaagt atcgttatcc gcattggtac 240

tacgcaaagc ttagtagtgc cttgaaagtc ccttggttgg tcgctccgct agtttcccct 300

agtagacctg gcagatgagg caggacactc cccactggcg acagtggtcc tgcctgcgtg 360

gctgcctgcg cacccttagg ggtgcgaagc caagtgacag acaaggtgtg aagagccccg 420

tgtgctacca atgagtcctc cggcccctga atgcggctaa tccaacccca cagctattgc 480

acacaagcca gtgtgtatgt agtcgtaatg agcaattgtg ggacggaacc gactactttg 540

ggtgtccgtg tttcctttta ttcttatcat tctgcttatg gtgacaatac tgtgaaatag 600

tgttgttacc 610

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

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

<400> 15
taaaactgga tccaggttgt tcccacctgg atctcctatt gggagttgta ctctattatt 60

ccggtaattt tgtacgccag ttttatcttc cccctcccca attgtaactt agaaggttat 120

caatacgacc aataggtggt agttagccaa actaccaaag gtcaagcact tctgtttccc 180

cggtcaaagt tgatatgctc caacagggca aaaacaactg agatcgttat ccgcaaagtg 240

cctacgcaaa gcctagtaac acctttgaag atttatggtt ggtcgttccg ctatttccca 300

tagtagacct ggcagatgag gctagaaatc ccccactggc gacagtgctc tagcctgcgt 360

ggctgcctgc gcacccttg ggtgcgaagc catacattgg acaaggtgtg aagagccccg 420

tgtgctcact ttgagtcctc cggcccctga atgtggctaa ccttaaccct gcagctagtg 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 tggtgcatgt gttgaacaaa 60

cagctacact cacatggggg cgggttttcc cgccctacgg cttctcgcga ggcccacccc 120

tccccttttct cccataacta cagtgctttg gtaggtaagc atcctgatcc cccgcggaag 180

ctgctcacgt ggcaactgtg gggacccaga caggttatca aaggcacccg gtctttccgc 240

cttcaggagt atccctgcta gcgaattcta gtagggctct gcttggtgcc aacctccccc 300

aaatgcgcgc tgcgggagtg ctcttcccca actcacccta gtatcctctc atgtgtgtgc 360

ttggtcagca tatctgagac gatgttccgc tgtcccagac cagtccagta atggacgggc 420

cagtgtgcgt agtcgtcttc cggcttgtcc ggcgcatgtt tggtgaaccg gtggggtaag 480

gttggtgtgc ccaacgcccg tactcagggg atacctcaag gcacccagga atgccaggga 540

ggtaccccgc ttcacagcgg gatctgaccc tggggtaaat 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
acatgggggg tctgcggacg gcttcggccc acccgcgaca agaatgccgt catctgtcct 60

cattacccgt attccttccc ttcccccgca accaccacgc ttactcgcgc acgtgttgag 120

tggcacgtgc gttgtccaaa cagctacacc cacacccttc ggggcgggtt tgtcccgccc 180

tcgggttcct cgcggaaccc ccccctccct ctctctcttt ctatccgccc tcacttccca 240

taactacagt gctttggtag gtgagcaccc tgaccccccg cggaagctgc taacgtggca 300

actgtgggga tccaggcagg ttatcaaagg cacccggtct ttccgccttc aggagtatct 360

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gctttccggt tttccggcgc atgtttggcg aaacgctgag gtaaggttgg tgtgcccaac 600

gcccgtaatt tggtgatacc tcaagaccac ccaggaatgc cagggaggta ccccacttcg 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
tatggcaggc gggcttgtgg acggcttcgg cccacccaca gcaagaatgc catcatctgt 60

cctcaccccc aattttccct tttcttcccc tgcaaccatt acgcttactc gcatgtgcat 120

tgagtggtgc atgtgttgaa caaacagcta cactcacatg ggggcgggtt ttcccgccct 180

acggcctctc gcgaggccca ccccttccct ccccttataa ctacagtgct ttggtaggta 240

agcatcctga tcccccgcgg aagctgctca cgtggcaact gtggggaccc agacaggtta 300

tcaaaggcac ccggtctttc cgccttcagg agtatcccta ctagtgaatt ctagcggggc 360

tctgcttggt gccaacctcc cccaaatgcg cgctgcggga gtgctcttcc ccaactcacc 420

ctagtatcct ctcatgtgtg tgcttggtca gcatatctga gacgatgttc cgctgtccca 480

gaccagtcca gtaatggacg ggccagtgcg tgtagtcgtc ttccggcttg tccggggcat 540

gtttggtgaa ccggtggggt aaggttggtg 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
tttgaaaggg gtctcctaga gagcttggcc gtcgggcctt ataccccgac ttgctgagtt 60

tctctaggag agccctttc ccagccctga ggcggctggt caataaaagc ctcaaacgta 120

actaacacct aagaagatca tgtaaaccct atgcctggtc tccactattc gaaggcaact 180

tgcaataaga agagtgggat caagacgctt aaagcataga gacagttttc ttttctaacc 240

cacatttgtg tggggtggca gatggcgtgc cataactcta atagtgagat accacgcttg 300

tggaccttat gctcacacag ccatcctcta gtaagtttgt gagacgtctg gtgacgtgtg 360

ggaacttatt ggaaacaaca ttttgctgca aagcatccta ctgccagcgg aaaaacacct 420

ggtaacaggt gcctctgggg ccaaaagcca aggtttaaca gaccctttag gattggttct 480

aaacctgaga tgttgtggaa gatatttagt acctgctgat ctggtagtta tgcaaacact 540

agttgtaagg cccatgaagg atgcccagaa ggtacccgta ggtaacaagt gacactatgg 600

atctgatttg gggccagata cctctatctt ggtgatctgg ttaaaaaaca tctaatgggc 660

caaacccggg 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 accccccttt 60

tccccagcca tgggttaaat ggcaataaag gacgtaacaa ctttgtaacc attaagcttt 120

gtaattttgt aaccactaag ctttgtgcac ataatgtaac catcaagctt gttagtccca 180

gcaggaggtt tgcatgcttg tagccgaaat ggggctcgac cccccatagt aggatacttg 240

attttgcatt ccattgtgga cctgcaaact ctacacatag aggctttgtc ttgcatctaa 300

acacctgagt acagtgtgta cctagaccct atagtacggg aggaccgttt gtttcctcaa 360

taaccctaca taataggcta ggtgggcatg cccaatttgc aagatcccag actgggggtc 420

ggtctgggca gggttagatc cctgttagct actgcctgat agggtggtgc tcaaccatgt 480

gtagtttaaa ttgagctgtt catatacc 508

<210> 21
<211> 248
<212> DNA
<213> Unknown

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

<400> 21
actgaagatc ctacagtaac tactgcccca atgaacgcca cagatgggtc tgctgatgac 60

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 tctaagtgaa gacagcagtg 120

ctctctgtga aaagttgatg acactcttca ggtttgtagc gatcactcaa ggctagcgga 180

tttccccgtg tggtaacaca cgcctctagg cccagaaggc acggtgttga cagcacccct 240

tgagtggctg gtcttcccca ccagcacctg atttgtggat tcttcctagt aacggacaag 300

catggctgct cttaagcatt cagtgcgtcc ggggctgaag gatgcccaga aggtacccgc 360

aggtaacgat aagctcactg tggatctgat ctggggctgc gggctgggtg tctttccacc 420

cagccaaaac ccgtaaaacg gtagtcgcag ttaaaaaacg tctaggcccc acccccccag 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 gtggtggtta ctaaataccc accatcgccc tgcacttccc 60

ttttcccctg tggctcaggg tcacttagcc ccctctttgg gttaccagta gttttctacc 120

cctgggcaca gggttaacta tgcaagacgg aacaacaatc tcttagtccc cctcgccgat 180

agtgggctcg acccccatgt gtaggagtgg ataagggacg gagtgagccg atacggggaa 240

gagtgtgcgg tcacacctta attccatgag cgctgcgaag aaggaagctg tgaacaatgg 300

cgacctgaac cgtacacatg gagctccaca ggcatggtac tcgttagact acgcagcctg 360

gttgggagtg ggtataccct gggtgagccg ccagtgaatg ggagttcact ggttaacaca 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 tttgaccagt ggctctgggt aacttagcca 60

aagtgtcctt ctccctttcc ctattatatg ttttatggct ttgtctggtc ttgtttagtt 120

tatatataag atcctttccg ccgatataga cctcgacagt ctagtgtagg aggattggtg 180

atattaattt gccccagaag agtgaccgtg acacatagaa accatgagta catgtgtatc 240

cgtggaggat cgcccgggac tggattccat atcccattgc catcccaaca agcggagggt 300

atacccacta tgtgcacgtc tgcagtggga gtctgcagat ttagtcatac tgcctgatag 360

ggtgtgggcc 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 tttgttgttg 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 gggtactcag gctgtttata taat 404

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

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

<400> 26
ttaaaacagc ctgtgggttg ttcccatcca cagggcccac tgggcgccag cactctggta 60

ttgcggtacc ttagtgcgcc tgttttatat acccgtcccc caaacgtaac ttagacgcat 120

gtcaacgaag accaatagta agcgcagcac accagctgtg ttccggtcaa gcacttctgt 180

taccccggac cgagtatcaa taagctactc acgtggctga aggagaaaac gttcgttacc 240

cgaccaatta cttcaagaaa cctagtaaca ccatgaaggt tgcgcagtgt ttcgctccgc 300

acaaccccag tgtagatcag gtcgatgagt caccgcattc cccacgggtg accgtggcgg 360

tggctgcgct ggcggcctgc ccatggggaa acccatggga cgcttcaata ctgacatggt 420

gcgaagagtc tattgagcta attggtagtc ctccggcccc tgaatgcggc taatcctaac 480

tgcggagcag atacccacac 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 tttgtggggt ggcagatggc gtgccataac tctattagtg 240

agataccatg cttgtggatc ttatgctcac acagccatcc tctagtaagt tgataaggtg 300

tctggtgata tgtgggaact cacatgaacc attaatttac cgtaaggtat cctatagcca 360

gcggaatcac atctggtgac agatgcctct ggggccgaaa gccaaggttt aacagaccct 420

ataggattgg tttcaaaacc tgaattgatg tggattgtgt atagtacctg ttgatctggt 480

aacagtgtca acactagttg taaggcccac gaaggatgcc cagaaggtac ccgtaggtaa 540

caagtgacac tatggatctg atctggggcc agctacctct atcatggtga gttggttaaa 600

aaacgtctag tgggccaaac ccagggggga tccctggttt ccttttacct aatcaaagcc 660

act 663

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

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

<400> 28
tttgaaaagg gggtgggggg gcctcggccc cctcaccctc ttttccggtg gtctggtccc 60

ggaccaccgt tactccattc agcttcttcg gaacctgttc ggaggaatta aacgggcacc 120

catactcccc ccaccccccct tttgtaacta agtatgtgtg ctcgtgatct tgactcccac 180

ggaacggacc gatccgttgg tgaacaaaca gctaggtcca catcctccct tcccctggga 240

gggcccccgc cctcccacat cctccccccca gcctgacgta tcacaggctg tgtgaagccc 300

ccgcgaaagc tgctcacgtg gcaattgtgg gtcccccctt catcaagaca ccaggtcttt 360

cctccttaag gctagccccg gcgtgtgaat tcacgttggg caactagtgg tgtcactgtg 420

cgctcccaat ctcggccgcg gagtgctgtt ccccaagcca aacccctggc ccttcactat 480

gtgcctggca agcatatctg agaaggtgtt ccgctgtggc tgccaacctg gtgacaggtg 540

ccccagtgtg cgtaaccttc ttccgtctcc ggacggtagt gattggttaa gatttggtgt 600

aaggttcatg tgccaacgcc ctgtgcggga tgaaacctct actgccctag gaatgccagg 660

caggtacccc 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 ttttccggaa cccctcttgg aagtccatgg tgaggggact 60

tgatacctca ccgccgtttg cctaggctat aggctaaatt tccctttccc tgtccttccc 120

ctatttcctt ttgttttgtt tgtaaatatt aattcctgca ggttcagggt tctttaatct 180

gtttctctat aagaacactc aatttttcac gctttctgtc tcctttcttc cagggctctc 240

cccttgccct aggctctggc cgttgcgccc ggcggggtca actccatgat tagcatggag 300

ctgtaggagt ctaaattggg gacgcagatg tttgggacgt cgccttgcag tgttaacttg 360

gctttcatga acctctttga tcttccacaa ggggtaggct acgggtgaaa cctcttaggc 420

taatacttca atgaagagat gccttggata gggtaacagc ggcggatatt ggtgagttgt 480

taagacaaaa accattcaac gccggaggac tggctctcat ccagtggatg cattgaggga 540

attgattgtc agggctgtct ctaggtttaa tctcagacct ctctgtgctt agggcaaaca 600

ctatttggcc ttaaatggga tcctgtgaga gggggtccct ccattgacag ctggactgtt 660

ctttggggcc ttatgtggtg tttgcctctg aggtactcag gggcatttag gtttttcctc 720

attcttaaat 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 tctcttaccc 120

ataagtgacg ccttagcgga acctttctac acttgatgtg gttaggggtt acattatttc 180

cctgggcctt ctttggccct ttttcccctg cactatcatt ctttcttccg ggctctcagc 240

atgccaatgt tccgaccggt gcgcccgccg gggttaactc catggttagc atggagctgt 300

aggccctaaa agtgctgaca ctggaactgg actattgaag catacactgt taactgaaac 360

atgtaactcc aatcgatctt ctacaagggg taggctacgg gtgaaacccc ttaggttaat 420

actcatattg agagatactt ctgataggtt aaggttgctg gataatggtg agtttaacga 480

caaaaaccat tcaacagctg tgggccaacc tcatcaggta gatgcttttg gagccaagtg 540

cgtaggggtg tgtgtggaaa tgcttcagtg gaaggtgccc tcccgaaagg 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 tcccacccac agggcccact gggcgccagc actctgattc 60

cacggaatct ttgtgcgcct gttttacaac ccttcccaat ttgtaacgta gaagcaatac 120

acactactga tcaatagtag gcatggcgcg ccagtcatgt catgatcaag cacttctgtt 180

cccccggact gagtatcaat agactgctca cgcggttgaa ggagaaaacg ttcgttaccc 240

ggctaactac ttcgagaaac ctagtagcac catggaagct gcggagtgtt tcgctcagca 300

ctttccccgt gtagatcagg tcgatgagtc actgcaatcc ccacgggcga ccgtggcagt 360

ggctgcgttg gcggcctgcc tatggggcaa cccataggac gctctaatgt ggacatggtg 420

cgaagagtct attgagctag ttagtagtcc tccggcccct gaatgcggct aatcctaact 480

gcggagcaca tgccttcaac ccaggaggtg gtgtgtcgta acgggtaact ctgcagcgga 540

accgactact ttgggtgtcc gtgtttcctt ttatccttat attggctgct tatggtgaca 600

atcacggaat tgttgccata tagctattgg attggccatc cggtgtctaa cagagctatt 660

gtatacctat ttgttggatt tactccccta tcatacaaat 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 tctggggttg ttcccacccc agaggcccac gtggcggcca gtacaccggt 60

accacggtac ccttgtacgc ctgttttata ctcccctccc cgtaaactag aagcacgaaa 120

cacaagttca atagaagggg gtacagacca gtaccaccac gaacaagcac ttctgttccc 180

ccggtgaggt cacatagact gtccccacgg tcaaaagtga ctgatccgtt atccgctcac 240

gtacttcgga aagcctagta ccaccttgga atctacgatg cgttgcgctc agcactcgac 300

cccggagtgt agcttaggct gatgagtctg gacgttcccc actggtgaca gtggtccagg 360

ctgcgttggc ggcctacctg tggtccaaaa ccacaggacg ctagtagtga acaaggtgtg 420

aagagcccac tgagctacct gagaatcctc cggcccctga atgcggctaa tcccaaccac 480

ggagcaggta atcgcaaacc agcggtcagc ctgtcgtaac gcgtaagtct gtggcggaac 540

cgactacttt gggtgtccgt gtttcctttt atttttatgg tggctgctta tggtgacaat 600

catagattgt tatcataaag caaattggat tggccatccg gagtgagcta aactatctat 660

ttctctgagt gttggattcg tttcacccac 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 agaggcccac gtggcggcta gtactccggt 60

accccggtac ccttgtacgc ctgttttata ctccctttcc caagtaactt tagaagaaat 120

aaactaatgt tcaacaggag ggggtacaaa ccagtaccac cacgaacaca cacttctgtt 180

tccccggtga agttgcatag actgtaccca cggttgaaag cgatgaatcc gttacccgct 240

taggtacttc gagaagccta gtatcatctt ggaatcttcg atgcgttgcg atcagcactc 300

taccccgagt gtagcttggg tcgatgagtc tggacacccc acaccggcga cgtggtccag 360

gctgcgttgg cggcctaccc atggctagca ccatgggacg ctagttgtga acaaggtgcg 420

aagagcctat tgagctacct gagagtcctc cggcccctga atgcggctaa tcccaaccac 480

ggagcaaatg ctcacaatcc agtgagtggt ttgtcgtaat gcgcaagtct gtggcggaac 540

cgactacttt gggtgtccgt 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 tctatcggta agctgtaccc acggctgaag aatgacctac cgttaaccgg 240

ctacctactt cgagaagcct agtaatgccg ttgaagtttt attgacgtta cgctcagcac 300

actaccccgt gtgtagtttt ggctgatgag tcacggcact ccccacgggc gaccgtggcc 360

gtggctgcgt tggcggccaa ccaaggagtg caagctcctt ggacgtcata ttacagacat 420

ggtgtgaaga gcctattgag ctaggtggta gtcctccggc ccctgaatgc ggctaatcct 480

aactccggag catatcggtg cgaaccagca cttggtgtgt tgtaatacgt aagtctggag 540

cggaaccgac tactttgggt gtccgtgttt cctgttttaa cttttatggc tgcttatggt 600

gacaatttaa cattgttacc atatagctgt tgggttggcc atccggattt tgttataaaa 660

ccatttcctc gtgccttgac ctttaacaca tttgtgaact tctttaaatc ccttttatta 720

gtccttaaat actaaga 737

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

<400> 35
aactgttgtt gtagcaatgc gcatattgct acttcggtac gcctaattgg taggcgcccg 60

gccgaccggc cccgcaaggg cctagtagga cgtgtgacaa tgccatgagg gatcatgaca 120

ctggggtgag cggaggcagc accgaagtcg ggtgaactcg actcccagtg cgaccacctg 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 tccccccccg gcactgggtg caagccccag aaaccgacgc 60

ctatctaagt agacgcaatg actcggcgcc gactcggcga ccggccaaaa ggtggtggat 120

gggtgatgac agggttggta ggtcgtaaat cccggtcatc ctggtagcca ctataggtgg 180

gtcttaagag aaggtcaaga ttcctcttac gcctgcggcg agaccgcgca cggtccacag 240

gtgttggccc 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 cccccttttgg cactgggtgc aagccccaga aaccgacgcc 60

tatttaaaca gacgttaaga accggcgccg acccggcgac cggccaaaag gtggtggatg 120

ggtgatgcca gggttggtag gtcgtaaatc ccggtcatct tggtagccac tataggtggg 180

tcttaagggt tggttaaggt ccctctggcg cttgtggcga gaaagcgcac ggtccacagg 240

tgttggccct accggtgtga ataagggccc gacgtcaggc tcgtcgttaa accgagccca 300

ctacccacct gggcaaacaa cgcccacgta cggtccacgt cgcccttcaa tgtctctctt 360

gaccaatagg cttagccggc gagttgacaa ggaccagtgg gggctgggcg gtaggggaag 420

gacccctgcc 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 gcactcggtg caagccccat aaaccgacgc 60

ctatctaagt agacgcaatg actcggcgcc gactcggcga ccggccaaaa ggtggtggat 120

gggtggtgac agggttggta ggtcgtaaat cccggtcatc ctggtagcca ctataggtgg 180

gtcttaagag aaggtcaaga ctcctcttgt gcctgcggcg agaccgcgca cggtccacag 240

gtgctggccc taccggtgtg aataagggcc cgacgtcagg ctcgtcgtta aaccgagccc 300

gtcacccacc tgggcaaacg acgcccacgt acggtccacg tcgcccttca 350

<210> 39
<211> 318
<212> DNA
<213> Pegivirus A

<400> 39
tgtagcaatg cgcatattgc tacttcggta cgcctaattg gtaggcgccc ggccgaccgg 60

ccccgcaagg gcctagtagg acgtgtgaca atgccatgcg ggatcatgac actggggtga 120

gcggaggcag caccgaagtc gggtgaactc gactcccagt gcgaccacct ggcttggtcg 180

ttcatggagg gcatgcccac gggaacgctg atcgtgcaaa gggatgggtc cctgcactgg 240

tgccatgcgc ggcaccactc cgtacagcct gatagggtgg cggcgggccc ccccagtgtg 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
attttctggc cgtgtagctg cttttgacca gtggctctgg gttacttagc caaatccccc 60

ttccttcacc cttttaaatt tgatggtctg tgttgtttgt tttgtcttgt ctaaataata 120

tataagatcc ttcccgccga tacagacctc gacagtctgg tgtaggaggg ttggtgttat 180

taatttgccc cagaagagtg accgtgacac atagaaacca tgagtacatg tgtatccgtg 240

gaggatcgcc cgggactgga ttccatatcc cattgccatc ccaacaagcg gagggtatac 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 catacccac 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 ttagagggaa tgtgcaattg agacttgacg agcgtctctt 300

tgagatgtgg cgcatgctct tggcattacc atagtgagct tccaggttgg gaaacctgga 360

ctgggcctat actacctgat agggtcgcgg ctggccgcct gtaactagta tagtcagttg 420

aaaccccccc 430

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

<400> 42
gtctctttag tgtctatgct tcagagagcg gtgaactgac accgttgctt cttgcacagc 60

ccttcgtgcc ggtctttccg gttctcgaca gcgttgggca tcatggctag ttaggctaag 120

atagtggatg atctagtgaa cagttttgga ttgtttggag ttttgtagcg atgctagtag 180

tgtgtgtgga cctccccacg tggtaacacg tgccccacag gccaaaagcc aaggtgttga 240

aagcacccct actagtccca gactcaccca tctgggaact cctctcatga aaaatcttag 300

taacttttga ttcggctatt catcaacctc tctagtcaag ggctgaagga tgcccggaag 360

gtacccgcag gtaacgataa gctcactgtg gatctgatcc ggggctttgg tgcgaccgtc 420

tgtccggcgt agccagagtt aaaaaacgtc taggcccttc caccccaagg gattggggtt 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 ggacccccctc cccttttttcc ttcctacctt 60

cttcccaaat ttccctcttc ccttgttatt ttggtttgga tttcctggac atgactcgga 120

cggatctatc tcatttgctt tgtgtctgct ccaccagtgg catggtcgaa agatcatcaa 180

cactggacgt gtactgtaat ggccaaacgt gcccacaggg gaaaccatgc cggtcgctgt 240

agcggcgggt ggacgtggtg gacccctctc cctgctcata aactttgggt aggtgaaggg 300

ttcaagcgac gcttgccgtg agggcgcatc cggatggtgg gaaccaacaa actaggctgt 360

aatggccgac ctcaggtgga tgagctaggg ctgctgcacc aaaagggact cgattcgata 420

tcccggcctg gtagcctagt gcagtggact cgtagttggg aatctacgac tggcctagta 480

cagggtgata gccccgtttc ccacgcccac ctgttgtagg gacacccccc 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 ttggttaagc cccatagaaa 180

cgaggcgtca cgtgccgaaa atccctttgc gtttcacaga accatcctaa ccatgggtgt 240

agtatgggaa tcgtgtatgg ggatgattag gatctctcgt agagggatag gtgtgccatt 300

caaatccagg gagtactctg gctctgacat tgggacattt gatgtaaccg gacctggttc 360

agtatccggg ttgtcctgta ttgttacggt gtatccgtct tggcacactg aaagggtatt 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 ggttacttag ccaagtccct ttctcttatt ttcactagtt 60

tatgttgtgt gttgtctgtt ttgttttgtt taaattgtat acaagatcct tcccgccgac 120

acagacctcg acagtctggt gtaggagggt tggtgatatt aatttgcccc aaaagagtga 180

ccgtgatacg tggaaaccat gagtacatgt gtatccgtgg aggatcgccc gggactggat 240

tccatatccc attgccatcc caacaaacgg agggtatacc caccacgtgc gcgtttgcag 300

tgggaatctg caaatttagt catactgcct gatagggtgt gggcctgcac tttggggtac 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 tgaaacaata tataagatcc tttccgccga 60

tatagacctc gacagtctag tgtaggagga ttggtgatag taacttgccc cagaagagtg 120

accgtgacac atagaaacca tgagtacatg tgtatccgtg gaggatcgcc cgggactgga 180

ttccatatcc cattgccatc ccaacaaacg gagggtatac 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 cttcccgccg atacagacct cgacagtctg 180

gtgtaggagg gttggtgtta ttaatttgcc ccaaaagagt gaccgtgaca cgtggaaacc 240

atgagtacat gtgtatccgt ggaggatcgc ccgggactgg attccatatc ccattgccat 300

cccaacaaac ggagggtata cccaccacgt gcgcgtttgc agtgggaatc tgcaaattta 360

gtcatactgc ctgatagggt gtgggcctgc actttggggt actcaggctg tttatataat 420

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

<400> 48
gtgtcattaa ggtgtgtttg gaagttcgaa ttagctggtt tgtggtgatt agtagacccc 60

ctggaggtac ccaattcgga tctgaccagg gacccgtgac tataccgctc cggtaattcg 120

ggtttaaaac aatgaacgtc accacacaat tacttttctc attttatttt catcattgtc 180

ttcctattta ccgattacac tcgatttcct tggatgttcc tggagatttc cctggttacc 240

tggaccctca ttattgttgt tgtttcaccc agcgagctgt cccaattgct tattatttgc 300

gcttacaact tcgtcctaat atttttctgg ttgatcgggt tgattgagct cccgggctat 360

cctgccattc aac 373

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

<400> 49
gggaacaatg gtccgtccgc ggaacgactc tagccatgag tctagtacga gtgcgtgcca 60

cccattagca caaaaaccac tgactgagcc acacccctcc cggaatcctg agtacaggac 120

attcgctcgg acgacgcatg agcctccatg ccgagaaaat tgggtatacc cacgggtaag 180

gggtggccac ccagcgggaa tctgggggct ggtcactgac tatggtacag cctgataggg 240

tgctgccgca gcgtcagtgg tatgcggctg ttcatggaac 280

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

<400> 50
acctccgtgc taggcacggt gcgttgtcag cgttttgcgc ttgcatgcgc tacacgcgtc 60

gtccaacgcg gagggaactt cacatcacca tgtgtcactc cccctatgga gggttccacc 120

ccgcttacac ggaaatgggt taaccatacc caaagtacgg gtatgcgggt cctcctaggg 180

ccccccggc aggtcgaggg agctggaatt cgtgaattcg tgagtacacg aaaatcgcgg 240

cttgaacgtc tttgaccttc ggagccgaaa tttgggcgtg ccccacgaag gaaggcgggg 300

gcggtgttgg gccgccgccc 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 atttgcctag gacctcgttt acaatatggg caatctaaaa ttataattag 60

gcctaaggga caaatcctcc tcagcgaagg ccgaaaagag gctagccatg cccttagtag 120

gactagcaaa ataagggggg tagcaacagt ggtgagttcg ttggatggct gaagccctga 180

gtacagggta gtcgtcagtg gttcgacgct tcggaggaca agcctcgaga taccacgtgg 240

acgagggcat gcccacagca catcttaacc tggacggggg tcgttcaggt gaaaacggtt 300

taaccaaccg ctacgaatac agcctgatag ggtgctgcag aggcccactg 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 cgattgggtt 60

agggagccct cctagcgacg gccgaaccgt gttaaccata cacgtagtag gactagcaga 120

cgggaggact agccatcgtg gtgagatccc tgagcagtct aaatcctgag tacaggatag 180

tcgtcagtag ttcaacgcag gcacggttct gccttgagat gctacgtgga cgagggcatg 240

cccaagactt gctttaatct cggcgggggt cgccgaggtg 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 actagcggta gcagtgagtt cgttggatgg ccgaacccct 180

gagtacaggg gagtcgtcaa tggttcgaca ctccattagt cgaggagtct cgagatgcca 240

tgtggacgag ggcatgccca cggcacatct taacccatgc gggggttgca tgggtgaaag 300

cgctaatcgt 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 tcaatttggt 60

tcagggcctc cctccagcga cggccgaact gggctagcca tgcccatagt aggactagca 120

aacggaggga ctagccgtag tggcgagctc cctgggtgtt ctaagtcctg agtacaggac 180

agtcgtcagt agttcgacgt gagcagaagc ccacctcgag atgctatgtg gacgagggca 240

tgcccaagac gcaccttaac cctagcgggg gtcgctaggg tgaaatcaca ccacgtgatg 300

ggagtccgac ctgatagggt gctgcagagg ctcactatta 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 tttattagag gacgttgcgc 60

tggcgcgagc tttaattagc agacgccaaa 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 cccccttaa actcaacact gtagtggatt cattttccgt tgcaaaacaa 60

aacattacta cccgcattta tgtaggctct gtgttttcta tgcgaccgtt acattaatct 120

ctactctgac ccactagttt ataaaaccga agacctgaat gaaacgattt tccttctttt 180

caacctctaa cgaacctctg acggcttgag aaacctgaag ttagtaatta tgtttaaaag 240

aaaggaaagt caaacgcgat gactcttaca tccctattcc ataccgttgc tccacaatgt 300

gagcgatgcg aggtcgggac tgcagtatta ggggaacgag ctacatggag agttaattat 360

ctctcccctc ctacgggagt ctcatgtgag ctgtagaaag cggttggcac ctctcgttac 420

ctcgcctgta catgatcc 438

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

<400> 57
aaaagcaaaa atgtgatctt gcttgtaaat acaattttga gaggttaata aattacaagt 60

agtgctattt ttgtatttag gttagctatt tagctttacg ttccaggatg cctagtggca 120

gccccacaat atccaggaag ccctctctgc ggtttttcag 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 gggtccgcgg acggcttcgg cctacccgcg 60

acaagaatgc cgtcatctgt ccttatcacc catattcttt cccttccccc gcaaccatca 120

cgcttactcg cgcacgtgtt gagtggcacg tgcgttgtcc aaacagttac actcacaccc 180

ttggggcggg tttgtcccgc cctcgggttc ctcgcggaac cctccctctt ctctctccct 240

ttctatccgc cttcactttc cataactaca gtgctttggt aggtaagcat cctgaccccc 300

cgcggaagct gccaacgtgg caactgtggg gatccaggca ggttatcaaa ggcacccggt 360

ctttccgcct tcaggagtat ccctgccggt gaattccgac agggctctgc ttggtgccaa 420

cctcccccaa atgcgcgctg cgggagtgct cttccccaac tcatcttagt aacctctcat 480

gtgtgtgctt ggtcagcata tctgaggcga cgttccgctg tcccagacca gtccagcaat 540

ggacgggcca gtgtgcgtag tcgctttccg gtttcccggc gcatgtttgg cgaaacgctg 600

aggtaaggtt ggtgtgccca atgcccgtaa tttggtgaca cctcaagacc acccaggaat 660

gccagggagg taccccactt cggtgggatc 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 gggcttgtgg acggcttcgg cccacccaca gcaagaatgc catcatctgt 60

cctcaccccc atgtttcccc tttctttccc tgcaaccgtt acgcttactc gcaggtgcat 120

ttgagtggtg cacgtgttga ataaacagct acactcacat gggggcgggt tttcccgccc 180

tgcggcctct cgcgaggccc acccctcccc ttcctcccat aactacagtg ctttggtagg 240

taagcatcct gatcccccgc ggaagctgct cacgtggcaa ctgtggggac ccagacaggt 300

tatcaaaggc acccggtctt tccgccttca ggagtatccc tgctagtgaa ttctagtagg 360

gctctgcttg gtgccaacct cccccaaatg cgcgctgcgg gagtgctctt ccccaactca 420

ccctagtatc ctctcatgtg tgtgcttggt cagcatatct gagacgatgt tccgctgtcc 480

cagaccagtc cagtaatgga cgggccagtg tgcgtagtcg tcttccggct tttccggcgc 540

atgtttggtg aaccggtggg gtaaggttgg tgtgcccaac gcccgtactt tggtgatacc 600

tcaagaccac ccaggaatgc cagggaggta ccccgcttca cagcgggatc tgaccctggg 660

ctaattgtct acggtggttc ttcttgcttc cacttctttc 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 ggcccaccca cagcaagaat 60

gccatcatct gtcctcaccc ccatttctcc cctccttccc ctgcaaccat tacgcttact 120

cgcatgtgca ttgagtggtg cacgtgttga acaaacagct acactcacgt gggggcgggt 180

tttcccgccc ttcggcctct cgcgaggccc acccttcccc ttcctcccat aactacagtg 240

ctttggtagg taagcatcct gatcccccgc ggaagctgct cgcgtggcaa ctgtggggac 300

ccagacaggt tatcaaaggc acccggtctt tccgcctcca ggagtatccc tgctagtgaa 360

ttctagtggg gctctgcttg gtgccaacct cccccaaatg cgcgctgcgg gagtgctctt 420

ccccaactca ccctagtatc ctctcatgtg tgtgcttggt cagcatatct gagacgatgt 480

tccgctgtcc cagaccagtc cagcaatgga cgggccagtg tgcgtagtcg tcttccggct 540

tgtccggcgc atgtttggtg aaccggtggg gtaaggttgg tgtgcccaac gcccgtactt 600

tggtgacaac tcaagaccac ccaggaatgc cagggaggta ccccgcctca 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 gggcttgtgg acggtttcgg cccacccaca gcaagaatgc catcatctgt 60

cctcaccccc aattttccct ttcttcccct gcaatcatca cgcttactcg catgtgcatt 120

gagtggtgca tgtgttgaac aaacagctac actcacatgg gggcgggttt tcccgcccta 180

cggcctctcg cgaggcccac ccttcccctc cccttataac tacagtgctt tggcaggtaa 240

gcatcctgat cccccgcgga agctgctcac gtggcaactg tggggaccca gacaggttat 300

caaaggcacc cggtctttcc gccttcagga gcatccccac tagtgaattc tagtggggct 360

ctgcttggtg ccaacctccc ccaaatgcgc gctgcgggag tgctcttccc caacccatcc 420

tagtatcctc tcatgtgtgt gcttggtcag catatctgag acgacgttcc gctgtcccag 480

accagtccag taatggacgg gccagtgtgc gtagtcgtct tccggcttgt ccggcgcatg 540

tttggtgaac cggtggggta aggttggtgt gcccaacgcc cgtactttgg tgacacctca 600

agaccaccca ggaatgccag ggaggtaccc cgcctcacgg cgggatctga ccctgggcta 660

attgtctacg gtggttcttc ttgcttccac 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 ttaatcgcat gtgcattgag tggtgcatgt gttgaacaaa 60

cagctacaat cacatggggg cgggttttcc cgccccacgg cttctcgcga ggcccatccc 120

tccctttct cccataacta cagtgctttg gtaggtaagc atcccgatct cccgcggaag 180

ctgctcacgt ggcaactgtg gggacccaga caggttatca aaggcacccg gtctttccgc 240

cttcaggagt atccctgcta gcgaattcta gtagggctct gcttggtgcc aacctctccc 300

aaatgcgcgc tgcgggagtg ctcttcccca aatcacccca gtatcctctc atgtgtgtgc 360

ctggtcagca tatctgagac gatgttccgc tgtcccagac cagtccagta atggacgggc 420

cagtgtgcgt agtcgtcctc cggcttgtcc ggcgcatgtt tggtgaaccg gtggggtaag 480

gttggtgtgc ccaacgcccg taatcagggg atacctcaag gcacccagga atgccaggga 540

ggtatcccgc ctcacagcgg gatctgaccc tggggtaaat gtctgcgggg ggtcctcttg 600

gcccaattct 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 ccttctttcc tgcaccgtta cgcttactcg catgtgcatt 60

gagtggtgca cgtgcttgaa caaacagcta cactcacatg ggggcgggtt ttcccgccct 120

gcggcctctc gcgaggccca cccctcccct tcctcccata actacagtgc tttggtaggt 180

aagcatcctg atcccccgcg gaagctgctc acgtggcaac tgtggggacc cagacaggtt 240

atcaaaggca cccggtcttt ccgccttcag gagtatccct gctagtgaat tctagtaggg 300

ctctgcttgg tgccaacctc ccccaaatgc gcgctgcggg agtgctcttc cccaactcac 360

cctagtatcc tctcatgtgt gtgcttggtc agcatatctg agacgatgtt ccgctgtccc 420

agaccagtcc agtaatggac gggccagtgt gcgtagtcgt cttccggctt gtccggcgca 480

tgtttggtga accggtgggg taaggttggt gtgcccaacg cccgtacttt ggtgatacct 540

caagaccacc caggaatgcc agggaggtac 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

cattacccgt attccttccc ttcccccgca accaccacgc ttactcgcgc acgtgttgag 120

tggcacgtgc gttgtccaaa cagctacacc cacacccttc ggggcgggtt tgtcccgccc 180

tcgggttcct cgcggaaccc ccccctccct ctctctcttt ctatccgccc tcacttccca 240

taactacagt gctttggtag gtgagcaccc tgaccccccg cggaagctgc taacgtggca 300

actgtgggga tccaggcagg ttatcaaagg cacccggtct ttccgccttc aggagtatct 360

ctgccggtga attccggtag ggctctgctt ggtgccaacc tcccccaaat gcgcgctgcg 420

ggagtgctct tccccaactc atcttagtaa cctctcatgt gtgtgcttgg tcagcatatc 480

tgaggcgacg ttccgctgtc ccagaccagt ccagcaatgg acgggccagt gtgcgtagtc 540

gctttccggt tttccggcgc atgtttggcg aaacgctgag gtaaggttgg tgtgcccaac 600

gcccgtaatt tggtgatacc tcaagaccac ccaggaatgc cagggaggta ccccacttcg 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 atcccaccca caggcccatt gggcgctagc actctggtat 60

cacggtacct ttgtgcgcct gttttatacc ccctccccca actgtaactt agaagtaaca 120

cacaccgatc aacagtcagc gtggcacacc agccacgttt tgatcaagca cttctgttac 180

cccggactga gtatcaatag actgctcacg cggttgaagg agaaagcgtt cgttatccgg 240

ccaactactt cgaaaaacct agtaacaccg tggaagttgc agagtgtttc gctcagcact 300

accccagtgt agatcaggtc gatgagtcac cgcattcccc acgggcgacc gtggcggtgg 360

ctgcgttggc ggcctgccca tggggaaacc catgggacgc tctaatacag acatggtgcg 420

aagagtctat tgagctagtt ggtagtcctc cggcccctga atgcggctaa tcctaactgc 480

ggagcacaca ccctcaagcc agagggcagt gtgtcgtaac gggcaactct gcagcggaac 540

cgactacttt gggtgtccgt gtttcatttt attcctatac tggctgctta tggtgacaat 600

tgagagatcg ttaccatata gctattggat tggccatccg gtgactaata gagctattat 660

atatcccttt gttgggttta taccacttag cttgaaagag gttaaaacat tacaattcat 720

tgttaagttg 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 caggcccatt gggcgctagc actctggtat 60

cacggtacct ttgtgcgcct gttttacatc ccctccccaa attgtaattt agaagtttca 120

cacaccgatc attagcaagc gtggcacacc agccatgttt tgatcaagca cttctgttac 180

cccggactga gtatcaatag accgctaacg cggttgaagg agaaaacgtt cgttacccgg 240

ccaactactt cgaaaaacct agtaacacca tggaagttgc ggagtgtttc gctcagcact 300

accccagtgt agatcaggtc gatgagtcac cgcgttcccc acgggcgacc gtggcggtgg 360

ctgcgttggc ggcctgccta cggggaaacc cgtaggacgc tctaatacag acatggtgcg 420

aagagtctat tgagctagtt ggtaatcctc cggcccctga atgcggctaa tcctaactgc 480

ggagcacata ccctcaaacc agggggcagt gtgtcgtaac gggcaactct gcagcggaac 540

cgactacttt gggtgtccgt 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 cccttccccc 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 tggtattcct ccggcccctg aatgcggcta atcctaactg 480

tggagcacat gcccctaatc caaggggtag tgtgtcgtaa tgagcaattc cgcagcggaa 540

ccgactactt tgggtgtccg tgtttcctct tattcttgta ctggctgctt atggtgacaa 600

ttgagagatt gttaccatat agctattgga ttggccatcc ggtgactaat agagctattg 660

tgtatctctt tgttggattt gtaccactta atttgaaaga aatcaggaca ctacgctaca 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 tacccaccca cagggcccac tgggcgctag cactctggta 60

tcacggtacc tttgtgcgcc tgttttatgc ccccttcccc caattgaaac ttagaagtta 120

cacacaccga tcaacagcgg gcgtggcata ccagccgcgt cttgatcaag cactcctgtt 180

tccccggacc gagtatcaat agactgctca cgcggttgaa ggagaaaacg ttcgttaccc 240

ggctaactac ttcgagaaac ctagtagcat catgaaagtt gcgaagcgtt tcgctcagca 300

catccccagt gtagatcagg tcgatgagtc accgcattcc ccacgggcga ccgtggcggt 360

ggctgcgttg gcggcctgcc tacggggcaa cccgtaggac gcttcaatac agacatggtg 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 cggtgtctaa 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 cacccactca cagggcccac tgggcgcaag cactctggca 60

cttcggtacc tttgtgcgcc tgttttatat cccctccccc aatgaaattt agaagcagca 120

aaccccgatc aatagcaggc ataacgctcc 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 ggcctgccca tggggtaacc catgggacgc tctaatacgg acatggtgtg 420

aagagtctac tgagctagtt agtagtcctc cggcccctga atgcggctaa tcccaactgc 480

ggagcacacg cccacaagcc agtgggtagt gtgtcgtaac gggcaactct gcagcggaac 540

cgactacttt gggtgtccgt gtttcctttt attcttatgt tggctgctta tggtgacaat 600

taaagagttg ttaccatata gctattggat tggccatccg gtgtgcaaca gagcgatcgt 660

ttacctattt attggttttg taccattgac actgaagtct gtgatcaccc 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 tacccaccca cagggcccac tgggcgctag cacactggta 60

ttacggtacc tttgtgcgcc tgttttatac ccccccccaac ctcgaaactt agaagtaaag 120

caaacccgat caatagcagg tgcggcgcac cagtcgcatc ttgatcaagc acttctgtaa 180

ccccggaccg agtatcaata gactgctcac gcggttgaag gagaaaacgt tcgttacccg 240

gctaactact tcgagaaacc cagtagcatc atgaaagttg cagagtgttt cgctcagcac 300

taccccgtg tagatcaggc cgatgagtca ccgcacttcc ccacgggcga ccgtggcggt 360

ggctgcgttg gcggcctgcc tatggggcaa cccataggac gctctaatac ggacatggtg 420

cgaagagtct attgagctag ttagtagtcc tccggcccct gaatgcggct aatcctaact 480

gcggagcaca tacccttaat ccaaagggca gtgtgtcgta acgggtaact ctgcagcgga 540

accgactact ttgggtgtcc gtgtttcctt ttaattttta ctggctgctt atggtgacaa 600

ttgaggaatt gttgccatat 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 tacccaccca cagggcccac tgggcgctag cactctggta 60

ctacggtacc tttgtgtgcc tgttttaagc ccctaccccc cactcgtaac ttagaaggct 120

tctcacactc gatcaatagt aggtgtggca cgccagtcac accgtgatca agcacttctg 180

ttaccccggt ctgagtacca ataagctgct aacgcggctg aaggggaaaa cgatcgttat 240

ccggctaact acttcgagaa acccagtacc accatgaacg ttgcagggtg tttcgctcgg 300

cacaacccca gtgtagatca ggtcgatgag tcaccgtatt ccccacgggc gaccgtggcg 360

gtggctgcgt tggcggcctg cccatggggt gacccatggg acgctctaat actgacatgg 420

tgcgaagagt ctattgagct agttagtagt cctccggccc ctgaatgcgg ctaatcctaa 480

ctgcggagca catacccttа atccaaaggg cagtgtgtcg taacgggcaa ctctgcagcg 540

gaaccgacta ctttgggtgt ccgtgtttcc ttttattctt acattggctg cttatggtga 600

caattgaaaa gttgttacca tatagctatt ggattggcca tccggtgaca aatagagcta 660

ttgtatatct ttttgttggt tacgtacccc ttaattacaa agtggtttca 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 cacccaccca cagggcccac agggcgctag cactctggta 60

tcacggtacc tttgtgcgcc tgttttatta ccccttcccc aattgaaaat tagaagcaat 120

gcacaccgat caacagcagg cgtggcgcac cagtcacgtc tcgatcaagc acttctgttt 180

ccccggaccg agtatcaata gactgctcac gcggttgaag gagaaagtgt tcgttatccg 240

gctaaccact tcgagaaacc cagtaacacc atgaaagttg cagggtgttt cgctcagcac 300

ttccccagtg tagatcaggt cgatgagtca ccgcgttccc cacgggcgac cgtggcggtg 360

gctgcgttgg cggcctgcct atgggttaac ccataggacg ctctaataca gacatggtgc 420

gaagagttta ttgagctggt tagtatccct ccggcccctg aatgcggcta atcctaactg 480

cggagcacgt gcctccaatc caggggggttg catgtcgtaa cgggtaactc tgcagcggaa 540

ccgactactt tgggtgtccg tgtttccttt tattcttata ctggctgctt atggtgacaa 600

tcgaggaatt gttaccatat agctattgga ttggccatcc ggtgtctaac agagcgatta 660

tatacctctt tgttggattt atgcagctca ataccaccaa ctttaacaca ttgaaatata 720

tcttaaagtt aaacacagca aa 742

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

<400> 73
gaagaaattc tttaagtgga tgctctcaaa ctcagggaaa 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 tcagggaaac ctaaatctag 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 cagggaaacc taaatctagt tatagacaag 60

gcaatcctga gccaagccga agtagtaatt agtaagttaa caatagatga cttacaacta 120

atcggaaggt gcagagactc gacgggagct accctaacgt 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 tgcagagact cgacgggagc 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 gacgggagct 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 acgggagcta 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 cggaaggtgc agagactcga cgggagctac cctaacgtca 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 atcggaaggt 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 tcggaaggtg 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 cctaacgtca 60

agacgagggt aaagagagag tccaattctc aaagccaata ggcagtagcg aaagctgcaa 120

gagaatgaaa atccgt 136

<210> 85
<211> 135
<212> DNA
<213> Anabaena sp.

<400> 85
tagatgactt acaactaatc ggaaggtgca gagactcgac gggagctacc ctaacgtcaa 60

gacgagggta 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 taacgtcaag 60

acgagggtaa 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 aacgtcaaga 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
tgacttacaa ctaatcggaa 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
agacgagggt aaagagagag tccaattctc aaagccaata ggcagtagcg aaagctgcaa 60

gagaatgaaa atccgt 76

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

<400> 93
gacgagggta aagagagagt ccaattctca aagccaatag gcagtagcga aagctgcaag 60

agaatgaaaa tccgt 75

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

<400> 94
acgagggtaa 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

gggaaaccta 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

gggaaaccta 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

gggaaaccta 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

gggaaaccta 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

gggaaaccta 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

gggaaaccta 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

gggaaaccta 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

gggaaaccta 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 cggaaggtgc 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 cggaaggtgc 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 cggaaggtgc 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 cggaaggtgc 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 cggaaggtgc 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 cggaaggtgc 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 cggaaggtgc 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 cggaaggtgc 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 cggaaggtgc 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 cggaaggtgc 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 cggaaggtgc agagactcga cgggagctac 180

cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaata ggca 234

<210> 151
<211> 104
<212> DNA
<213> Azoarcus sp.

<400> 151
tgcgccgatg aaggtgtaga gactagacgg cacccaccta 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 caaacgctat ggtgaaggca tagtccaggg agtggcgaaa 120

gtcacacaaa ccggaatccg t 141

<210> 153
<211> 78
<212> DNA
<213> Azoarcus sp.

<400> 153
acggcaccca cctaaggcaa acgctatggt gaaggcatag tccagggagt 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 ccttatggta 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 agggtcaagt 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
ctagggtagt 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

tcttttatga 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 ggtagtagcg 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 tcggcgcctg 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 tcggcgcctg 120

cgccgatgaa ggtgtagaga ctagacggca cccacctaag gcaa 164

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

<400> 171
aggattagat actacactaa gtgtccccca gactggtgac agtctggtgt gcatccagct 60

atatcggtga aaccccattg gggtaatacc gagggaagct atattatata tatattaata 120

aatagccccg 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

attcagggaa cacctaaaca aact 84

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

<400> 173
actactgaaa gcataaataa ttgtgccttt atacagtaat gtatatcgaa aaatcctcta 60

attcagggaa 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

attcagggaa 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

attcagggaa 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 aaaagcaaat 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 ttaaatctgg tgaactcggt gaaaccctaa 60

tggggcaata ccgagccaag ccatagggag gatatatgag aggcaagaag ttaattcttg 120

aggccactga gactggctgt atcatcccta cgtcacacaa acttaatgcc gatggttatt 180

tcagaaagaa aaccaatggc gtcttagaga tgtatcacag aacggtgtgg aaggagcata 240

acggagacat acctgatggc ttcgagatag accataagtg tcgcaatagg gcttgctgta 300

atatagagca tttacagatg cttgagggta cagcccacac tgttaagacc aatcgtgaac 360

gctacgcaga cagaaaggaa acagctaggg aatactggct ggagactgga tgtaccggcc 420

tagcactcgg tgagaagttt ggtgtgtcgt tctcttctgc ttgtaagtgg attagagaat 480

ggaaggcgta gagactatcc gaaaggagta gggccgaggg tgagactccc tcgtaacccg 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 gagtcatgag 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

cagggaaacc taaatctgtt gacagacaag gcaatcctga gccaagccga gaactctaag 120

ttattcggaa ggtgcagaga ctcgacggga gctaccctaa cgtca 165

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

<400> 180
acggacttag aaaactgagc cttgatcgag aaatctttca agtggaagct ctcaaattca 60

gggaaaccta aatctgttta cagatatggc aatcctgagc caagccgaaa caagtcctga 120

gtgttaaagc tcataactca tcggaaggtg cagagactcg acgggagcta ccctaacgtt 180

a 181

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

<400> 181
acggacttaa aaaaattgag ccttggcaga gaaatctgtc atgcgaacgc tctcaaattc 60

agggaaacct aagtctggca acagatatgg caatcctgag ccaagcctta atcaaggaaa 120

aaaacatttt tacctttac cttgaaagga aggtgcagag actcaacggg agctacccta 180

acaggtca 188

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

<400> 182
acggacttaa agataaattg agccttgagg cgagaaatct ctcaagtgta agctgtcaaa 60

ttcagggaaa cctaaatctg taaattcaga caaggcaatc ctgagccaag cctaggggta 120

ttagaaatga gggagtttcc ccaatctaag atcaatacct aggaaggtgc agagactcga 180

cgggagctac cctaacgtta 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 cctaacgtca 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 cctaacgtca 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 cctaacgtca 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 cctaacgtca 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 cctaacgtca 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 cctaacgtca 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 cctaacgtca 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 cctaacgtca 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 aaacaaacaa atagatgact 60

tacaactaat cggaaggtgc agagactcga cgggagctac cctaacgtca 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 aaacaaacaa 60

atagatgact tacaactaat cggaaggtgc agagactcga cgggagctac cctaacgtca 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
cggtgcgagc aaacaaacaa atagatgact tacaactaat cggaaggtgc agagactcga 60

cgggagctac cctaacgtca 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 cctaacgtca 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 cctaacgtca 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 cctaacgtca 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 cctaacgtca 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 cctaacgtca 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 cctaacgtca 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
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cggaaggtgc agagactcga cgggagctac cctaacgtca 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 cctaacgtca 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 cctaacgtca 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
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cggaaggtgc agagactcga cgggagctac cctaacgtca 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
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cggaaggtgc agagactcga cgggagctac cctaacgtca agacgagggt aaagagagag 120

tccaattctc aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa atccgtggct 180

cgcagcgcgc ctaccg 196

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

<213> Artificial Sequence

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

<400> 207
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cggaaggtgc agagactcga cgggagctac cctaacgtca agacgagggt aaagagagag 120

tccaattctc aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa atccgtggct 180

cgcagcgcgc ctaccgaaag ccggcgtcga cgttagcgc 219

<210> 208
<211> 219
<212> DNA
<213> Artificial Sequence

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

<400> 208
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cggaaggtgc agagactcga cgggagctac cctaacgtca 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
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cggaaggtgc agagactcga cgggagctac cctaacgtca 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 tgacttacaa ctaatcggaa ggtgcagaga ctcgacggga 60

gctaccctaa cgtcaagacg agggtaaaga gagagtccaa 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 aaacaaacaa 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 aggcagtagc 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
atactcatac tagcgtcagc aaacaaacaa aggcagtagc gaaagctgca agagaatgaa 60

aatccgtggc tcgcagc 77

<210> 219
<211> 87
<212> DNA
<213> Artificial Sequence

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

<400> 219
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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
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tcgcagc 67

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

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

<400> 221
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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
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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
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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
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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
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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
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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
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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
cggtgcgagc 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
cgctccgacg 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 cctaacgtca 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
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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
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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

atcgcagcat 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 aagtcatata 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 aagtcatata 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 gcttcatata 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 aagctcgcac 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 gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120

tagtaattag taagttaaca aaacaaaaac aagctcgcac 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 gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120

tagtaattag taagttaaca acacaaacac aagtcatata 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 aagtcatata 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 aagtcatata 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 aagtcatata 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 aagtcatata 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 aagtcatata 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 aagtcatata 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 gctgcgatcc acggacttaa ataattgagc cttaaagaag aaattcttta 60

agtggatgct ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc 120

caagccgaag tagtaattag taagttaaca acacaaacac aagtcatata 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 gggaaaccta aatctagtta tagacaaggc aatcctgagc 120

caagccgaag tagtaattag taagttaaca acacaaacac aagtcatata 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 tcagggaaac ctaaatctag 120

ttatagacaa ggcaatcctg agccaagccg aagtagtaat tagtaagtta acaacacaaa 180

cacaagtcat 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 tcagggaaac ctaaatctag 120

ttatagacaa ggcaatcctg agccaagccg aagtagtaat tagtaagtta acaacacaaa 180

cacaagtcat 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 tcagggaaac ctaaatctag 120

ttatagacaa ggcaatcctg agccaagccg aagtagtaat tagtaagtta acaacacaaa 180

cacaagtcat 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 gggaaaccta 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 gggaaaccta 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 gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120

tagtaattag taagttaaca aaacaaaaac aagctcgcac 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 cggaaggtgc 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 cggaaggtgc 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 cggaaggtgc 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 cggaaggtgc 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 cggaaggtgc 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 cggaaggtgc 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 cggaaggtgc 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 cggaaggtgc agagactcga 180

cgggagctac cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaata 240

aacaaaaaca agctcgcacc 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 cggaaggtgc agagactcga 180

cgggagctac cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaata 240

aacaaaaaca agctcgcact 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 cggaaggtgc agagactcga 180

cgggagctac cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaata 240

aacaaaaaca agctcgcact 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 cggaaggtgc 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 cggaaggtgc 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 cggaaggtgc 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"

<400> 289
gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60

ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120

tagtaattag taagttaaca atagatgact tacaactaat cggaaggtgc agagactcga 180

cgggagctac cctaacgtcc acaaacacaa gtcatatact gagtataagt ataatttcag 240

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

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

<400> 290
gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60

ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120

tagtaattag taagttaaca atagatgact tacaactaat cggaaggtgc agagactcga 180

cgggagctac cctaacgtca acaaaaacaa 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 cggaaggtgc 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 cggaaggtgc 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 cggaaggtgc agagactcga 180

cgggagctac cctaacgtca acaaaaacaa gctcgcaccg 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 gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120

tagtaattag taagttaaca atagatgact tacaactaat cggaaggtgc agagactcga 180

cgggagctac cctaacgtca acaaaaacaa gctcgcactg 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 gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120

tagtaattag taagttaaca atagatgact tacaactaat cggaaggtgc agagactcga 180

cgggagctac cctaacgtca acaaaaacaa gctcgcactg 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 aagtcatata 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 cggaaggtgc agagactcga cgggagctac 180

cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaata cacaaacaca 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 cggaaggtgc agagactcga 180

cgggagctac cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaata 240

cacaaacaca 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 cggaaggtgc 180

agagactcga cgggagctac cctaacgtca agacgagggt aaagagagag tccaattctc 240

aaagccaata cacaaacaca 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 cggaaggtgc agagactcga 180

cgggagctac cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaata 240

cacaaacaca 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 cggaaggtgc 180

agagactcga cgggagctac cctaacgtca agacgagggt aaagagagag tccaattctc 240

aaagccaata cacaaacaca 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 gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta 60

agtggatgct ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc 120

caagccgaag tagtaattag taagttaaca atagatgact tacaactaat cggaaggtgc 180

agagactcga cgggagctac cctaacgtca agacgagggt aaagagagag tccaattctc 240

aaagccaata cacaaacaca 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 cggaaggtgc agagactcga cgggagctac 180

cctaacgtcc acaaacacaa gtcatatact 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 cggaaggtgc agagactcga 180

cgggagctac cctaacgtcc acaaacacaa gtcatatact 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 cggaaggtgc 180

agagactcga cgggagctac cctaacgtcc acaaacacaa gtcatatact 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 cggaaggtgc agagactcga 180

cgggagctac cctaacgtcc acaaacacaa gtcatatact 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 gctgcgatcc acggacttaa ataattgagc cttaaagaag aaattcttta 60

agtggatgct ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc 120

caagccgaag tagtaattag taagttaaca atagatgact tacaactaat cggaaggtgc 180

agagactcga cgggagctac cctaacgtcc acaaacacaa gtcatatact 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 gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta 60

agtggatgct ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc 120

caagccgaag tagtaattag taagttaaca atagatgact tacaactaat cggaaggtgc 180

agagactcga cgggagctac cctaacgtcc acaaacacaa gtcatatact 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
    1130   1135   1140

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
    1235   1240   1245

Ser Cys Gly Ser Cys Cys Lys Phe Asp Glu Asp Asp Ser Glu Pro
    1250   1255   1260

Val Leu Lys Gly Val Lys Leu His Tyr Thr
    1265   1270

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<211> 7096
<212> PRT
<213> Severe acute respiratory syndrome coronavirus 2

<400> 326
Met Glu Ser Leu Val Pro Gly Phe Asn Glu Lys Thr His Val Gln Leu
1   5   10   15

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 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 Asp Leu Asn Gln Leu Thr Gly Tyr Lys Lys Pro Ala Ser Arg
    1940 1945 1950

Glu Leu Lys Val Thr Phe Phe Pro Asp Leu Asn Gly Asp Val Val
    1955 1960 1965

Ala Ile Asp Tyr Lys His Tyr Thr Pro Ser Phe Lys Lys Gly Ala
    1970 1975 1980

Lys Leu Leu His Lys Pro Ile Val Trp His Val Asn Asn Ala Thr
    1985 1990 1995

Asn Lys Ala Thr Tyr Lys Pro Asn Thr Trp Cys Ile Arg Cys Leu
    2000 2005 2010

Trp Ser Thr Lys Pro Val Glu Thr Ser Asn Ser Phe Asp Val Leu
    2015 2020 2025

Lys Ser Glu Asp Ala Gln Gly Met Asp Asn Leu Ala Cys Glu Asp
    2030 2035 2040

Leu Lys Pro Val Ser Glu Glu Val Val Glu Asn Pro Thr Ile Gln
    2045 2050 2055

Lys Asp Val Leu Glu Cys Asn Val Lys Thr Thr Glu Val Val Gly
    2060 2065 2070

Asp Ile Ile Leu Lys Pro Ala Asn Asn Ser Leu Lys Ile Thr Glu
    2075 2080 2085

Glu Val Gly His Thr Asp Leu Met Ala Ala Tyr Val Asp Asn Ser
    2090 2095 2100

Ser Leu Thr Ile Lys Lys Pro Asn Glu Leu Ser Arg Val Leu Gly
    2105 2110 2115

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

Leu Tyr Glu Cys Leu Tyr Arg Asn Arg Asp Val Asp Thr Asp Phe
    5120 5125 5130

Val Asn Glu Phe Tyr Ala Tyr Leu Arg Lys His Phe Ser Met Met
    5135 5140 5145

Ile Leu Ser Asp Asp Ala Val Val Cys Phe Asn Ser Thr Tyr Ala
    5150   5155   5160

Ser Gln Gly Leu Val Ala Ser Ile Lys Asn Phe Lys Ser Val Leu
    5165   5170   5175

Tyr Tyr Gln Asn Asn Val Phe Met Ser Glu Ala Lys Cys Trp Thr
    5180   5185   5190

Glu Thr Asp Leu Thr Lys Gly Pro His Glu Phe Cys Ser Gln His
    5195   5200   5205

Thr Met Leu Val Lys Gln Gly Asp Asp Tyr Val Tyr Leu Pro Tyr
    5210   5215   5220

Pro Asp Pro Ser Arg Ile Leu Gly Ala Gly Cys Phe Val Asp Asp
    5225   5230   5235

Ile Val Lys Thr Asp Gly Thr Leu Met Ile Glu Arg Phe Val Ser
    5240   5245   5250

Leu Ala Ile Asp Ala Tyr Pro Leu Thr Lys His Pro Asn Gln Glu
    5255   5260   5265

Tyr Ala Asp Val Phe His Leu Tyr Leu Gln Tyr Ile Arg Lys Leu
    5270   5275   5280

His Asp Glu Leu Thr Gly His Met Leu Asp Met Tyr Ser Val Met
    5285   5290   5295

Leu Thr Asn Asp Asn Thr Ser Arg Tyr Trp Glu Pro Glu Phe Tyr
    5300   5305   5310

Glu Ala Met Tyr Thr Pro His Thr Val Leu Gln Ala Val Gly Ala
    5315   5320   5325

Cys Val Leu Cys Asn Ser Gln Thr Ser Leu Arg Cys Gly Ala Cys
    5330   5335   5340

Ile Arg Arg Pro Phe Leu Cys Cys Lys Cys Cys Tyr Asp His Val
    5345   5350   5355

Ile Ser Thr Ser His Lys Leu Val Leu Ser Val Asn Pro Tyr Val
    5360 5365 5370

Cys Asn Ala Pro Gly Cys Asp Val Thr Asp Val Thr Gln Leu Tyr
    5375 5380 5385

Leu Gly Gly Met Ser Tyr Tyr Cys Lys Ser His Lys Pro Pro Ile
    5390 5395 5400

Ser Phe Pro Leu Cys Ala Asn Gly Gln Val Phe Gly Leu Tyr Lys
    5405 5410 5415

Asn Thr Cys Val Gly Ser Asp Asn Val Thr Asp Phe Asn Ala Ile
    5420 5425 5430

Ala Thr Cys Asp Trp Thr Asn Ala Gly Asp Tyr Ile Leu Ala Asn
    5435 5440 5445

Thr Cys Thr Glu Arg Leu Lys Leu Phe Ala Ala Glu Thr Leu Lys
    5450 5455 5460

Ala Thr Glu Glu Thr Phe Lys Leu Ser Tyr Gly Ile Ala Thr Val
    5465 5470 5475

Arg Glu Val Leu Ser Asp Arg Glu Leu His Leu Ser Trp Glu Val
    5480 5485 5490

Gly Lys Pro Arg Pro Pro Leu Asn Arg Asn Tyr Val Phe Thr Gly
    5495 5500 5505

Tyr Arg Val Thr Lys Asn Ser Lys Val Gln Ile Gly Glu Tyr Thr
    5510 5515 5520

Phe Glu Lys Gly Asp Tyr Gly Asp Ala Val Val Tyr Arg Gly Thr
    5525 5530 5535

Thr Thr Tyr Lys Leu Asn Val Gly Asp Tyr Phe Val Leu Thr Ser
    5540 5545 5550

His Thr Val Met Pro Leu Ser Ala Pro Thr Leu Val Pro Gln Glu
    5555   5560   5565

His Tyr Val Arg Ile Thr Gly Leu Tyr Pro Thr Leu Asn Ile Ser
    5570   5575   5580

Asp Glu Phe Ser Ser Asn Val Ala Asn Tyr Gln Lys Val Gly Met
    5585   5590   5595

Gln Lys Tyr Ser Thr Leu Gln Gly Pro Pro Gly Thr Gly Lys Ser
    5600   5605   5610

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
    5645   5650   5655

Pro Ala Arg Ala Arg Val Glu Cys Phe Asp Lys Phe Lys Val Asn
    5660   5665   5670

Ser Thr Leu Glu Gln Tyr Val Phe Cys Thr Val Asn Ala Leu Pro
    5675   5680   5685

Glu Thr Thr Ala Asp Ile Val Val Phe Asp Glu Ile Ser Met Ala
    5690   5695   5700

Thr Asn Tyr Asp Leu Ser Val Val Asn Ala Arg Leu Arg Ala Lys
    5705   5710   5715

His Tyr Val Tyr Ile Gly Asp Pro Ala Gln Leu Pro Ala Pro Arg
    5720   5725   5730

Thr Leu Leu Thr Lys Gly Thr Leu Glu Pro Glu Tyr Phe Asn Ser
    5735   5740   5745

Val Cys Arg Leu Met Lys Thr Ile Gly Pro Asp Met Phe Leu Gly
    5750   5755   5760

Thr Cys Arg Arg Cys Pro Ala Glu Ile Val Asp Thr Val Ser Ala
    5765   5770   5775

Leu Val Tyr Asp Asn Lys Leu Lys Ala His Lys Asp Lys Ser Ala
    5780   5785   5790

Gln Cys Phe Lys Met Phe Tyr Lys Gly Val Ile Thr His Asp Val
    5795   5800   5805

Ser Ser Ala Ile Asn Arg Pro Gln Ile Gly Val Val Arg Glu Phe
    5810   5815   5820

Leu Thr Arg Asn Pro Ala Trp Arg Lys Ala Val Phe Ile Ser Pro
    5825   5830   5835

Tyr Asn Ser Gln Asn Ala Val Ala Ser Lys Ile Leu Gly Leu Pro
    5840   5845   5850

Thr Gln Thr Val Asp Ser Ser Gln Gly Ser Glu Tyr Asp Tyr Val
    5855   5860   5865

Ile Phe Thr Gln Thr Thr Glu Thr Ala His Ser Cys Asn Val Asn
    5870   5875   5880

Arg Phe Asn Val Ala Ile Thr Arg Ala Lys Val Gly Ile Leu Cys
    5885   5890   5895

Ile Met Ser Asp Arg Asp Leu Tyr Asp Lys Leu Gln Phe Thr Ser
    5900   5905   5910

Leu Glu Ile Pro Arg Arg Asn Val Ala Thr Leu Gln Ala Glu Asn
    5915   5920   5925

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
    5945   5950   5955

Lys Thr Glu Gly Leu Cys Val Asp Ile Pro Gly Ile Pro Lys Asp
    5960   5965   5970

Met Thr Tyr Arg Arg Leu Ile Ser Met Met Gly Phe Lys Met Asn
    5975   5980   5985

Tyr Gln Val Asn Gly Tyr Pro Asn Met Phe Ile Thr Arg Glu Glu
    5990   5995   6000

Ala Ile Arg His Val Arg Ala Trp Ile Gly Phe Asp Val Glu Gly
    6005   6010   6015

Cys His Ala Thr Arg Glu Ala Val Gly Thr Asn Leu Pro Leu Gln
    6020   6025   6030

Leu Gly Phe Ser Thr Gly Val Asn Leu Val Ala Val Pro Thr Gly
    6035   6040   6045

Tyr Val Asp Thr Pro Asn Asn Thr Asp Phe Ser Arg Val Ser Ala
    6050   6055   6060

Lys Pro Pro Pro Gly Asp Gln Phe Lys His Leu Ile Pro Leu Met
    6065   6070   6075

Tyr Lys Gly Leu Pro Trp Asn Val Val Arg Ile Lys Ile Val Gln
    6080   6085   6090

Met Leu Ser Asp Thr Leu Lys Asn Leu Ser Asp Arg Val Val Phe
    6095   6100   6105

Val Leu Trp Ala His Gly Phe Glu Leu Thr Ser Met Lys Tyr Phe
    6110   6115   6120

Val Lys Ile Gly Pro Glu Arg Thr Cys Cys Leu Cys Asp Arg Arg
    6125   6130   6135

Ala Thr Cys Phe Ser Thr Ala Ser Asp Thr Tyr Ala Cys Trp His
    6140   6145   6150

His Ser Ile Gly Phe Asp Tyr Val Tyr Asn Pro Phe Met Ile Asp
    6155   6160   6165

Val Gln Gln Trp Gly Phe Thr Gly Asn Leu Gln Ser Asn His Asp
    6170   6175   6180

Leu Tyr Cys Gln Val His Gly Asn Ala His Val Ala Ser Cys Asp
    6185   6190   6195

Ala Ile Met Thr Arg Cys Leu Ala Val His Glu Cys Phe Val Lys
    6200   6205   6210

Arg Val Asp Trp Thr Ile Glu Tyr Pro Ile Ile Gly Asp Glu Leu
    6215   6220   6225

Lys Ile Asn Ala Ala Cys Arg Lys Val Gln His Met Val Val Lys
    6230   6235   6240

Ala Ala Leu Leu Ala Asp Lys Phe Pro Val Leu His Asp Ile Gly
    6245   6250   6255

Asn Pro Lys Ala Ile Lys Cys Val Pro Gln Ala Asp Val Glu Trp
    6260   6265   6270

Lys Phe Tyr Asp Ala Gln Pro Cys Ser Asp Lys Ala Tyr Lys Ile
    6275   6280   6285

Glu Glu Leu Phe Tyr Ser Tyr Ala Thr His Ser Asp Lys Phe Thr
    6290   6295   6300

Asp Gly Val Cys Leu Phe Trp Asn Cys Asn Val Asp Arg Tyr Pro
    6305   6310   6315

Ala Asn Ser Ile Val Cys Arg Phe Asp Thr Arg Val Leu Ser Asn
    6320   6325   6330

Leu Asn Leu Pro Gly Cys Asp Gly Gly Ser Leu Tyr Val Asn Lys
    6335   6340   6345

His Ala Phe His Thr Pro Ala Phe Asp Lys Ser Ala Phe Val Asn
    6350   6355   6360

Leu Lys Gln Leu Pro Phe Phe Tyr Tyr Ser Asp Ser Pro Cys Glu
    6365 6370 6375

Ser His Gly Lys Gln Val Val Ser Asp Ile Asp Tyr Val Pro Leu
    6380 6385 6390

Lys Ser Ala Thr Cys Ile Thr Arg Cys Asn Leu Gly Gly Ala Val
    6395 6400 6405

Cys Arg His His Ala Asn Glu Tyr Arg Leu Tyr Leu Asp Ala Tyr
    6410 6415 6420

Asn Met Met Ile Ser Ala Gly Phe Ser Leu Trp Val Tyr Lys Gln
    6425 6430 6435

Phe Asp Thr Tyr Asn Leu Trp Asn Thr Phe Thr Arg Leu Gln Ser
    6440 6445 6450

Leu Glu Asn Val Ala Phe Asn Val Val Asn Lys Gly His Phe Asp
    6455 6460 6465

Gly Gln Gln Gly Glu Val Pro Val Ser Ile Ile Asn Asn Thr Val
    6470 6475 6480

Tyr Thr Lys Val Asp Gly Val Asp Val Glu Leu Phe Glu Asn Lys
    6485 6490 6495

Thr Thr Leu Pro Val Asn Val Ala Phe Glu Leu Trp Ala Lys Arg
    6500 6505 6510

Asn Ile Lys Pro Val Pro Glu Val Lys Ile Leu Asn Asn Leu Gly
    6515 6520 6525

Val Asp Ile Ala Ala Asn Thr Val Ile Trp Asp Tyr Lys Arg Asp
    6530 6535 6540

Ala Pro Ala His Ile Ser Thr Ile Gly Val Cys Ser Met Thr Asp
    6545 6550 6555

Ile Ala Lys Lys Pro Thr Glu Thr Ile Cys Ala Pro Leu Thr Val
    6560 6565 6570

Phe Phe Asp Gly Arg Val Asp Gly Gln Val Asp Leu Phe Arg Asn
    6575 6580 6585

Ala Arg Asn Gly Val Leu Ile Thr Glu Gly Ser Val Lys Gly Leu
    6590 6595 6600

Gln Pro Ser Val Gly Pro Lys Gln Ala Ser Leu Asn Gly Val Thr
    6605 6610 6615

Leu Ile Gly Glu Ala Val Lys Thr Gln Phe Asn Tyr Tyr Lys Lys
    6620 6625 6630

Val Asp Gly Val Val Gln Gln Leu Pro Glu Thr Tyr Phe Thr Gln
    6635 6640 6645

Ser Arg Asn Leu Gln Glu Phe Lys Pro Arg Ser Gln Met Glu Ile
    6650 6655 6660

Asp Phe Leu Glu Leu Ala Met Asp Glu Phe Ile Glu Arg Tyr Lys
    6665 6670 6675

Leu Glu Gly Tyr Ala Phe Glu His Ile Val Tyr Gly Asp Phe Ser
    6680 6685 6690

His Ser Gln Leu Gly Gly Leu His Leu Leu Ile Gly Leu Ala Lys
    6695 6700 6705

Arg Phe Lys Glu Ser Pro Phe Glu Leu Glu Asp Phe Ile Pro Met
    6710 6715 6720

Asp Ser Thr Val Lys Asn Tyr Phe Ile Thr Asp Ala Gln Thr Gly
    6725 6730 6735

Ser Ser Lys Cys Val Cys Ser Val Ile Asp Leu Leu Leu Asp Asp
    6740 6745 6750

Phe Val Glu Ile Ile Lys Ser Gln Asp Leu Ser Val Val Ser Lys
    6755 6760 6765

Val Val Lys Val Thr Ile Asp Tyr Thr Glu Ile Ser Phe Met Leu
    6770   6775   6780

Trp Cys Lys Asp Gly His Val Glu Thr Phe Tyr Pro Lys Leu Gln
    6785   6790   6795

Ser Ser Gln Ala Trp Gln Pro Gly Val Ala Met Pro Asn Leu Tyr
    6800   6805   6810

Lys Met Gln Arg Met Leu Leu Glu Lys Cys Asp Leu Gln Asn Tyr
    6815   6820   6825

Gly Asp Ser Ala Thr Leu Pro Lys Gly Ile Met Met Asn Val Ala
    6830   6835   6840

Lys Tyr Thr Gln Leu Cys Gln Tyr Leu Asn Thr Leu Thr Leu Ala
    6845   6850   6855

Val Pro Tyr Asn Met Arg Val Ile His Phe Gly Ala Gly Ser Asp
    6860   6865   6870

Lys Gly Val Ala Pro Gly Thr Ala Val Leu Arg Gln Trp Leu Pro
    6875   6880   6885

Thr Gly Thr Leu Leu Val Asp Ser Asp Leu Asn Asp Phe Val Ser
    6890   6895   6900

Asp Ala Asp Ser Thr Leu Ile Gly Asp Cys Ala Thr Val His Thr
    6905   6910   6915

Ala Asn Lys Trp Asp Leu Ile Ile Ser Asp Met Tyr Asp Pro Lys
    6920   6925   6930

Thr Lys Asn Val Thr Lys Glu Asn Asp Ser Lys Glu Gly Phe Phe
    6935   6940   6945

Thr Tyr Ile Cys Gly Phe Ile Gln Gln Lys Leu Ala Leu Gly Gly
    6950   6955   6960

Ser Val Ala Ile Lys Ile Thr Glu His Ser Trp Asn Ala Asp Leu
    6965   6970   6975

Tyr Lys Leu Met Gly His Phe Ala Trp Trp Thr Ala Phe Val Thr
    6980   6985   6990

Asn Val Asn Ala Ser Ser Ser Glu Ala Phe Leu Ile Gly Cys Asn
    6995   7000   7005

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
    7025   7030   7035

Ser Tyr Ser Leu Phe Asp Met Ser Lys Phe Pro Leu Lys Leu Arg
    7040   7045   7050

Gly Thr Ala Val Met Ser Leu Lys Glu Gly Gln Ile Asn Asp Met
    7055   7060   7065

Ile Leu Ser Leu Leu Ser Lys Gly Arg Leu Ile Ile Arg Glu Asn
    7070   7075   7080

Asn Arg Val Val Ile Ser Ser Asp Val Leu Val Asn Asn
    7085   7090   7095

<210> 327
<211> 4405
<212> PRT
<213> Severe acute respiratory syndrome coronavirus 2

<400> 327
Met Glu Ser Leu Val Pro Gly Phe Asn Glu Lys Thr His Val Gln Leu
1   5   10   15

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 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 Asp Leu Asn Gln Leu Thr Gly Tyr Lys Lys Pro Ala Ser Arg
    1940 1945 1950

Glu Leu Lys Val Thr Phe Phe Pro Asp Leu Asn Gly Asp Val Val
    1955 1960 1965

Ala Ile Asp Tyr Lys His Tyr Thr Pro Ser Phe Lys Lys Gly Ala
    1970 1975 1980

Lys Leu Leu His Lys Pro Ile Val Trp His Val Asn Asn Ala Thr
    1985 1990 1995

Asn Lys Ala Thr Tyr Lys Pro Asn Thr Trp Cys Ile Arg Cys Leu
    2000 2005 2010

Trp Ser Thr Lys Pro Val Glu Thr Ser Asn Ser Phe Asp Val Leu
    2015 2020 2025

Lys Ser Glu Asp Ala Gln Gly Met Asp Asn Leu Ala Cys Glu Asp
    2030 2035 2040

Leu Lys Pro Val Ser Glu Glu Val Val Glu Asn Pro Thr Ile Gln
    2045 2050 2055

Lys Asp Val Leu Glu Cys Asn Val Lys Thr Thr Glu Val Val Gly
    2060 2065 2070

Asp Ile Ile Leu Lys Pro Ala Asn Asn Ser Leu Lys Ile Thr Glu
    2075 2080 2085

Glu Val Gly His Thr Asp Leu Met Ala Ala Tyr Val Asp Asn Ser
    2090 2095 2100

Ser Leu Thr Ile Lys Lys Pro Asn Glu Leu Ser Arg Val Leu Gly
    2105 2110 2115

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 Gly Phe Ala Val
    4400   4405

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<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 80

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
145 150 155 160

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 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

385 390 395 400

Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn
405 410 415

Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr
420 425 430

Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
435 440

<210> 349
<211> 5
<212> PRT
<213> Artificial Sequence

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

<400> 349
Gly Gly Gly Gly Ser
1 5

<210> 350
<211> 15
<212> PRT
<213> Artificial Sequence

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

<400> 350
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
1 5 10 15

<210> 351
<211> 30
<212> DNA
<213> Artificial Sequence

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

<400> 351
tataattcta ccctattgag gcattgacta 30