

# SEQUENCE LISTING

<110> MASSACHUSETTS INSTITUTE OF TECHNOLOGY  
ORNA THERAPEUTICS, INC.

<120> CIRCULAR RNA COMPOSITIONS AND METHODS

<130> OBS-012W0

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<160> 336

<170> PatentIn version 3.5

<210> 1

<211> 585

<212> DNA

<213> Encephalomyocarditis virus

<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 gcctcgggtgc | 480 |
| acatgcttta catgtgttta gtcgaggtta aaaaacgtct agggcccccg aaccacgggg  | 540 |
| acgtggtttt ctttgaaaa acacgatgat aatatggcca caacc                   | 585 |

<210> 2  
 <211> 568  
 <212> DNA  
 <213> Encephalomyocarditis virus

|                                                                    |     |
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| ctccccctcc ccccccttac tatactggcc gaagccactt ggaataaggc cggtgtgcgt  | 60  |
| ttgtctacat gctatcttct accgcattac cgtcttatgg taatgtgagg gtccagaacc  | 120 |
| tgaccctgtc ttcttgacga acactcctag gggctcttcc cctctcgaca aaggagtgtg  | 180 |
| aggtctgttg aatgtcgtga aggaagcagt tcctctggaa gcttcttaaa gacaaacaac  | 240 |
| gtctgtagcg accctttgca ggcagcggaa cccccacct ggtgacaggt gcctctgcgg   | 300 |
| ccaaaagcca cgtgtataag atacacctgc aaaggcggca caacccaggt gccacgttgt  | 360 |
| gagttggata gttgtggaaa gagtcaaatg gctctcctca agcgtattca acaaggggct  | 420 |
| gaaggatgcc cagaaggtac cccattgtat gggatctgat ctggggcctc ggtgcacgtg  | 480 |
| ctttacacgt gttgagtcga ggtgaaaaaa cgtctaggcc ccccgaaacca cggggacgtg | 540 |
| gttttccttt gaaaaccacg attacaat                                     | 568 |

<210> 3  
 <211> 696  
 <212> DNA  
 <213> Encephalomyocarditis virus

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| <400> 3                                                           |     |
| ttgccagtct gtcgatatc gcaggctggg tccgtgacta cccactcccc ctttcaacgt  | 60  |
| gaaggctacg atagtgccag ggcgggtact gccgtaagtg ccaccccaaa caacaacaac | 120 |
| aaaacaaact ccccccccc ccccttacta tactggccga agccacttgg aataaggccg  | 180 |
| gtgtgcgttt gtctacatgc tattttctac cgcattaccg tcttatggta atgtgagggt | 240 |
| ccagaacctg accctgtctt cttgacgaac actcctaggg gtctttcccc tctcgacaaa | 300 |
| ggagtgtgaa gtctgttgaa tgtcgtgaag gaagcagttc ctctggaagc ttcttaaaga | 360 |
| caaacaacgt ctgtagcgac cctttgcagg cagcgggaacc cccacctgg tgacaggtgc | 420 |

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| ctctgcggcc aaaagccacg tgtataagat acacctgcaa aggcggcaca accccagtgc  | 480 |
| cacgttgtga gttggatagt tgtggaaaga gtcaaattggc tctcctcaag cgtattcaac | 540 |
| aaggggctga aggatgccc gaaggtaccc cattgtatgg gatctgatct ggggcctcgg   | 600 |
| tgcacgtgct ttacacgtgt tgagtcgagg tgaaaaaacg tctaggcccc ccgaaccacg  | 660 |
| gggacgtggg tttcctttga aaaccacgat tacaat                            | 696 |

<210> 4

<211> 697

<212> DNA

<213> Encephalomyocarditis virus

<400> 4

|                                                                    |     |
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| ttgccagtct gtcgatatc gcaggctggg tccgtgacta cccactcccc ctttcaacgt   | 60  |
| gaaggctacg atagtgccag ggcgggtact gccgtaagtg ccaccccaaa acaacaacaa  | 120 |
| ccccccctct ccctcctccc cccctaactg 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 aacccagtgc  | 480 |
| ccacgttgtg agttggatag ttgtggaaag agtcaaattgg ctctcctcaa gcgtattcaa | 540 |
| caaggggctg aaggatgccc agaaggtacc ccattgtatg ggatctgatc tggggcctcg  | 600 |
| gtgcacatgc ttacatgtg tttagtcgag gttaaaaaac gtctaggccc cccgaaccac   | 660 |
| ggggacgtgg ttttcctttg aaaaacacga tgataat                           | 697 |

<210> 5

<211> 562

<212> DNA

<213> Encephalomyocarditis virus

<400> 5

|                                                                   |     |
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| ccccccccct aacgttactg gccgaagccg cttggaataa ggccggtgtg cgtttgtcta | 60  |
| tatgttattt tccaccatat tgccgtcttt tggcaatgtg agggcccgga aacctggccc | 120 |
| tgtcttcttg acgagcattc ctaggggtct ttcccctctc gccaaaggaa tgcaaggtct | 180 |

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| gttgaatgtc gtgaaggaag cagttcctct ggaagcttct tgaagacaaa caacgtctgt  | 240 |
| agcgaccctt tgcaggcagc ggaaccccc 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 |
| atgtgttttag tcgaggttaa aaaacgtcta ggcccccgga accacgggga cgtggttttc | 540 |
| ctttgaaaaa cacgatgata at                                           | 562 |

<210> 6  
 <211> 156  
 <212> DNA  
 <213> Picobirnavirus sp.

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| <400> 6                                                           |     |
| gtaaatataa tgctatttac aaaatttaaa cagaaaggag agatgttatg aaccggtttt | 60  |
| acaaggtttc atacatcgaa aatagcacta cctggggcag ccgacacact aacatcgctc | 120 |
| gtttaaccag aagtgttact gaaaggaggt tattta                           | 156 |

<210> 7  
 <211> 340  
 <212> DNA  
 <213> Hepatitis C virus

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| <400> 7                                                            |     |
| acctgcccct aataggggcg acactccgcc atgaatcact cccctgtgag gaactactgt  | 60  |
| cttcacgcag aaagcgtcta gccatggcgt tagtatgagt gtcgtacagc ctccaggccc  | 120 |
| ccccctcccg ggagagccat agtggctctgc ggaaccggtg agtacaccgg aattgccggg | 180 |
| aagactgggt cttttcttgg ataaaccac tctatgcccg gacatttggg cgtgcccccg   | 240 |
| caagactgct agccgagtag cgttgggttg cgaaaggcct tgtggtactg cctgataggg  | 300 |
| tgcttgcgag tgccccggga ggtctcgtag accgtgcatc                        | 340 |

<210> 8  
 <211> 315  
 <212> DNA  
 <213> Human Cosavirus

|                                                                   |    |
|-------------------------------------------------------------------|----|
| <400> 8                                                           |    |
| ctacaagctt tgtgtaaaca aacttttgtt tggcttttct caagcttctc tcacatcagg | 60 |

|                                                                     |     |
|---------------------------------------------------------------------|-----|
| ccccaagat gtcctgaagg taccccggtgt atctgaggat gagcaccatc gactaccg     | 120 |
| acctgcaaaa ttttgcaaac gcatgtggta tcccagcccc ctctctcgg ggagggggct    | 180 |
| ttgctcactc agcacaggat ctgatcagga gatccacctc cgggtgcttta caccggggcg  | 240 |
| tggatttaaa aattgcccga ggccctggcgc acaacctagg ggactagggtt ttccttatat | 300 |
| tttaaagctg tcaat                                                    | 315 |

<210> 9  
 <211> 182  
 <212> DNA  
 <213> Human Cosavirus

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| <400> 9                                                           |     |
| gtcttaggac gacgcatgtg gtatcccagc cccgcctac attggcgggg gcttttgaag  | 60  |
| caccagacac tggatctgat caggaggagg gtagctgctt tacagcccct cttaaaaatt | 120 |
| gccaaggtc cggccacca acctagggga ctaggttttc cttttatttt taaattgtca   | 180 |
| tt                                                                | 182 |

<210> 10  
 <211> 759  
 <212> DNA  
 <213> Human Cosavirus

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| <400> 10                                                           |     |
| acatggggga gactgcatgt ggcagtcttg aaacgtgtgg tttgacgtct accttatatg  | 60  |
| gcagtgggtg gactactgca aagatgtcac cgtgctttac acggtttttg aacccacac   | 120 |
| cggctgtttg acgctcgtag ggcagcaggt ttattttcat taaaattctt actttctagc  | 180 |
| tgcattgagtt ctattcatgc agacggagtg atactcccgt tccttcttgg acaggttgcc | 240 |
| tccacgccct ttgtggatct taaggtgacc aagtcactgg tggttgaggt gaagatagag  | 300 |
| agtcctcttg ggaatgtcat gtggctgtgc caggggttgt agcgatgcca ttcgtgtgtg  | 360 |
| cggatttcct ctctgtgtga cacgagctc acaggccaaa agccccgtcc gaaaggaccc   | 420 |
| gaatggtgga gtgaccctga ctccccctg catagttttg tgattaggaa cttgaggaat   | 480 |
| ttctgtcata aatctctatc acatcaggcc ccaaagatgt cctgaaggta ccctgtgtat  | 540 |
| ctgaggatga gcaccaccga ctaccggac ttgcattagc agacacatgt gggtgcccag   | 600 |
| ccccacctct tcagaggtgg ggctttgctc actcagcaca ggatctgatc aggagccccg  | 660 |

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| ctcgtgtgct ttacactcga cgcgggggta aaaattgccc aaggcctggc acaacaacct | 720 |
| aggggactag gttttcctat ttttgtaa at tatgtcaat                       | 759 |

<210> 11  
 <211> 478  
 <212> DNA  
 <213> Human rhinovirus

|                                                                     |     |
|---------------------------------------------------------------------|-----|
| <400> 11                                                            |     |
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| cgcttcaccc gaggcgaaaa gtgagggttat cgttatccgc aaagtgccta cgagaagcct  | 120 |
| agtagcactt ttgaagccta tggctggctg ctcaactgtt taccagcag tagacctggc    | 180 |
| agatgaggct agatgttccc caccagcgat ggtgatctag cctgcgtggc tgcctgcaca   | 240 |
| ctctattgag tgtgaagcca gaaagtggac aagggtgtgaa gaggcctattg tgctcacttt | 300 |
| gagtcctccg gccctgaat gtggctaata ctaacccgt agctgttgca tgtaatccaa     | 360 |
| catgtctgca gtcgtaatgg gcaactatgg gatggaacca actactttgg gtgtccgtgt   | 420 |
| ttcttgtttt tctttatgct tgcttatggt gacaactgta gttattacat ttgttacc     | 478 |

<210> 12  
 <211> 628  
 <212> DNA  
 <213> Human rhinovirus

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| <400> 12                                                           |     |
| ttaaaacagc ggatgggtat cccaccattc gaccattgg gtgtagtact ctggtactat   | 60  |
| gtacctttgt acgcctgttt ctccccaacc acccttcctt aaaattcca cccatgaaac   | 120 |
| gtagaagct tgacattaaa gtacaatagg tggcgccata tccaatgggtg tctatgtaca  | 180 |
| agcacttctg tttcccagga gcgagggtata ggctgtaccc actgccaaaa gcctttaacc | 240 |
| gttatccgcc aaccaactac gtaacagtta gtaccatctt gttcttgact ggacgttcga  | 300 |
| tcagggtgat tttccctcca ctagtgttggt cgatgaggct aggaattccc cacgggtgac | 360 |
| cgtgtcctag cctgcgtggc ggccaacca gcttatgctg ggacgccctt ttaaggacat   | 420 |
| ggtgtgaaga ctcgcatgtg cttgggtgtg 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> Human rhinovirus

<400> 13

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tacaatatga ccaataggtg acaatcatcc agactgtcaa aggtcaagca cttctgtttc 180  
cccgggtcaat gaggatatgc tttaccaag gcaaaaacct tagagatcgt tatccccaca 240  
ctgcctacac agagcccagt accatTTTTG atataattgg gttggtcgct ccctgcaaac 300  
ccagcagtag acctggcaga tgaggctgga cattccccac tggcgacagt ggtccagcct 360  
gcgtggctgc ctgctcacc ttcttgggtg agaagcctaa ttattgacaa ggtgtgaaga 420  
gccgcgtgtg ctgagtggtc ttcttccggc 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> Human rhinovirus

<400> 14

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tccggtacac ttgcacgcca gtttgccacc cctcaccgt cgtaacttag aagctaacaa 120  
ctcgaccaac aggcggttgt aaaccatacc acttacggtc aagcactcct gtttccccgg 180  
tatgcgagga atagactcct acagggttga agcctcaagt atcgttatcc gcatttgtac 240  
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gctgcctgcg cacccttagg ggtgcgaagc caagtgcag acaaggtgtg aagagccccg 420  
tgtgctacca atgagtcctc cggcccctga atgcggctaa tccaaccca 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> Human rhinovirus

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| <400> 15                                                           |     |
| taaaactgga tccaggttgt tcccacctgg atctcctatt gggagttgta ctctattatt  | 60  |
| ccggtaattt tgtacgccag ttttatcttc cccctccca attgtaactt agaaggttat   | 120 |
| caatacgacc aataggtggt agttagccaa actaccaaag gtcaagcact tctgtttccc  | 180 |
| cggtaaagt tgatatgctc caacaggga aaaacaactg agatcgttat ccgcaaagt     | 240 |
| cctacgcaa gcctagtaac acctttgaag atttatggtt ggtcgttccg ctatttccca   | 300 |
| tagtagacct ggcagatgag gctagaaatc cccactggc gacagtgctc tagcctgcgt   | 360 |
| ggctgcctgc gcaccccttg ggtgcgaagc catacattgg acaagggtgtg aagagccccg | 420 |
| tgtgctcact ttgagtcctc cggcccctga atgtggctaa ccttaaccct gcagctagt   | 480 |
| catgtaatcc aacatgttgc tagtcgtaat gagtaattgc gggacgggac caactacttt  | 540 |
| gggtgtccgt gtttcacttt ttccttttaa tattgcttat ggtgacaata tatatagcta  | 600 |
| tatatattga cacc                                                    | 614 |

<210> 16  
 <211> 624  
 <212> DNA  
 <213> Salivirus A

|                                                                   |     |
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| cagctacact cacatggggg cgggttttcc cgccctacgg cttctcgcga ggcccacccc | 120 |
| tcccctttct ccataacta cagtgttttg gtaggtaagc atcctgatcc cccgcggaag  | 180 |
| ctgctcacgt ggcaactgtg gggaccaga caggttatca aaggcaccg gtctttccgc   | 240 |
| cttcaggagt atccctgcta gcgaattcta gtagggctct gcttggtgcc aacctcccc  | 300 |
| aatgcgcg tgcgggagt ctcttccca actcacccta gtatcctctc atgtgtgtgc     | 360 |

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| ttggtcagca tatctgagac gatgttccgc tgtcccagac cagtccagta atggacgggc  | 420 |
| cagtgtgcgt agtcgtcttc cggcttgtcc ggcgcatgtt tggatgaaccg gtggggtaag | 480 |
| gttgggtgtgc ccaacgcccc tactcagggg atacctcaag gcacccagga atgccaggga | 540 |
| ggtacccccgc ttcacagcgg gatctgacct tggggtaaat gtctgcgggg ggtcttcttg | 600 |
| gcccacttct cagtactttt cagg                                         | 624 |

<210> 17  
 <211> 730  
 <212> DNA  
 <213> Salivirus FHB

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| <400> 17                                                          |     |
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| cattaccctg attccttccc ttccccgca accaccacgc ttactcgcgc acgtgttag   | 120 |
| tggcacgtgc gttgtccaaa cagctacacc cacacccttc ggggcgggtt tgtcccgccc | 180 |
| tcgggttcct cgcggaacct cccctccct ctctctcttt ctatccgccc tcaattccca  | 240 |
| taactacagt gctttggtag gtgagcacc tgaccccccg cggaagctgc taacgtggca  | 300 |
| actgtgggga tccaggcagg ttatcaaagg caccgggtct ttccgccttc aggagtatct | 360 |
| ctgccggtga attccggtag ggctctgctt ggtgccaacc tccccaaat gcgcgctgcg  | 420 |
| ggagtgtctt tccccactc atcttagtaa cctctcatgt gtgtgcttgg tcagcatatc  | 480 |
| tgaggcgacg ttccgctgtc ccagaccagt ccagcaatgg acgggccagt gtgcgtagtc | 540 |
| gctttccggt tttccggcgc atgtttggcg aaacgctgag gtaagggttg tgtgccaac  | 600 |
| gcccgtatt ttgtgatacc tcaagaccac ccaggaatgc caggaggta cccacttcg    | 660 |
| gtgggatctg accctgggct aattgtctac ggtggttctt cttgcttcca cttctctttt | 720 |
| ttctggcatg                                                        | 730 |

<210> 18  
 <211> 709  
 <212> DNA  
 <213> Salivirus NG-J1

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| <400> 18                                                          |     |
| tatggcaggc gggcttgtgg acggcttcgg cccaccaca gcaagaatgc catcatctgt  | 60  |
| cctcaccccc aattttccct tttcttcccc tgcaaccatt acgcttactc gcatgtgcat | 120 |

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| tgagtgggtgc atgtgttgaa caaacagcta cactcacatg ggggcgggtt tccccgcct | 180 |
| acggcctctc gcgaggccca ccccttcct ccccttataa ctacagtgtt ttggtaggta  | 240 |
| agcatcctga tccccgcgg aagctgtca cgtggcaact gtggggaccc agacaggta    | 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 ccggtggggg aaggttggtg tgcccaacgc ccgtactttg gtgacacctc | 600 |
| aagaccacc aggaatgcc gggaggtacc ccacctcac gtgggatctg accctgggct    | 660 |
| aattgtctac ggtggttctt cttgcttcca cttctttctt ctgttcacg             | 709 |

<210> 19

<211> 708

<212> DNA

<213> Human Parechovirus

<400> 19

|                                                                    |     |
|--------------------------------------------------------------------|-----|
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| tctctaggag agcccttttc ccagccctga ggcggctggt caataaaagc ctcaaacgta  | 120 |
| actaacacct aagaagatca tgtaaaccct atgcctggtc tccactattc gaaggcaact  | 180 |
| tgcaataaga agagtgggat caagacgctt aaagcataga gacagttttc ttttctaacc  | 240 |
| cacatttggt tgggggtggca gatggcgtgc cataactcta atagtgagat accacgcttg | 300 |
| tggaccttat gtcacacag ccatacctcta gtaagtttgt gagacgtctg gtgacgtgtg  | 360 |
| ggaacttatt ggaaacaaca ttttgctgca aagcatccta ctgccagcgg aaaaacacct  | 420 |
| ggtaacaggt gcctctgggg ccaaaagcca aggtttaaca gaccctttag gattggttct  | 480 |
| aaacctgaga tgttgtggaa gatatttagt acctgctgat ctggtagtta tgcaaact    | 540 |
| agttgtaagg cccatgaagg atgccagaa ggtaccgta ggtaacaagt gacactatgg    | 600 |
| atctgatttg gggccagata cctctatctt ggtgatctgg ttaaaaaaca tctaattgggc | 660 |
| caaaccggg ggggatcccc ggtttcctct tattctatca atgccact                | 708 |

<210> 20

<211> 508  
<212> DNA  
<213> Crohivirus B

<400> 20  
gtataagaga caggtgtttg ctttgtcttc ggactggcat cttgggacca accccccttt 60  
tccccagcca tgggtttaat ggcaataaag gacgtaacaa ctttgtaacc attaagcttt 120  
gtaattttgt aaccactaag ctttgtgcac ataatgtaac catcaagctt gttagtccca 180  
gcaggagggtt tgcatgcttg tagccgaaat ggggctcgac ccccatagt 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 aggggtggtgc tcaaccatgt 480  
gtagtttaaa ttgagctggt catatacc 508

<210> 21  
<211> 248  
<212> DNA  
<213> Picornaviridae sp.

<400> 21  
actgaagatc ctacagtaac tactgccccca 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> Rosavirus M-7

<400> 22  
tatgcatcac tggacggcct aacctcggtc gtggcttctt gccgatttca gcgctaccag 60  
gctttctgggt ctgccaggc gttgattagt aggtgcactg tctaagtga gacagcagtg 120  
ctctctgtga aaagttgatg acactcttca ggtttgtagc gatcactcaa ggctagcgga 180  
tttccccgtg tggtaacaca cgcctctagg cccagaaggc acggtgttga cagcaccct 240

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| tgagtggctg gtcttcccca ccagcacctg atttgtggat tcttcctagt aacggacaag | 300 |
| catggctgct ctttaagcatt cagtgcgtcc ggggctgaag gatgccaga aggtacccgc | 360 |
| aggtaacgat aagctcactg tggatctgat ctggggctgc gggctgggtg tctttccacc | 420 |
| cagccaaaac ccgtaaaacg gtagtcgcag ttaaaaaacg tctaggcccc accccccag  | 480 |
| ggatgggggg ttcccttaaa ccctcacaag ttcaac                           | 516 |

<210> 23  
 <211> 478  
 <212> DNA  
 <213> Shanbavirus A

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| <400> 23                                                           |     |
| tgaaaagggg gcgcaggggtg gtggtgggta 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 ggcatggtag tcgttagact acgcagcctg  | 360 |
| gttgggagtg ggtataccct gggtagagccg ccagtgaatg ggagttcact ggттаacaca | 420 |
| cactgcctga tagggtcagg gcctcctgtc cccgccgtaa tgaggtagac catatgcc    | 478 |

<210> 24  
 <211> 403  
 <212> DNA  
 <213> Pasivirus A

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| <400> 24                                                          |     |
| gcggctggat attctggccg tgcaactgct tttgaccagt ggctctgggt aacttagcca | 60  |
| aagtgtcctt ctccctttcc ctattatatg ttttatggct ttgtctggtc ttgtttagtt | 120 |
| tatatataag atcctttccg ccgatataga cctcgacagt ctagttagg aggattgggtg | 180 |
| atattaattt gcccagaag agtgaccgtg acacatagaa accatgagta catgtgtatc  | 240 |
| cgtggaggat cgccgggac tggattccat atcccattgc catcccaaca agcggagggt  | 300 |
| ataccacta tgtgcacgtc tgcagtggga gtctgcagat ttagtcatac tgcctgatag  | 360 |
| ggtgtgggccc tgcactctgg ggtactcagg ctgtttatat aat                  | 403 |

<210> 25  
<211> 404  
<212> DNA  
<213> Pasivirus A

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

<210> 26  
<211> 744  
<212> DNA  
<213> Echovirus E14

<400> 26  
ttaaaccagc ctgtgggttg ttcccatcca cagggccac tgggcgccag cactctggtta 60  
ttgcggtacc ttagtgccgc tgttttatat acccgcccc caaacgtaac ttagacgcat 120  
gtcaacgaag accaatagta agcgcagcac accagctgtg ttccggtcaa gcacttctgt 180  
taccgggac cgagtatcaa taagctactc acgtggctga aggagaaaac gttcgttacc 240  
cgaccaatta cttcaagaaa cctagtaaca ccatgaaggt tgcgcagtgt ttcgctccgc 300  
acaaccccag ttagatcag 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> Human Parechovirus

<400> 27  
 gtacattaga tgcgtcatct gcaacttttag tcaataaatt acctccaatg tcattaccaa 60  
 cattccctac cttttcacta acacctaaga caacaagtac ctatgcctgg tctccactat 120  
 tcgaaggcaa cttgcaataa gaagagtgga attaagacgc tttaaagcata gagctagtta 180  
 tcttttctaa cccacaaagt tttgtggggg ggccagatggc gtgccataac tctattagt 240  
 agataccatg cttgtggatc ttatgctcac acagccatcc tctagtaagt tgataagggtg 300  
 tctggtgata tgtgggaact cacatgaacc attaatttac cgtaagggtat cctatagcca 360  
 gcggaatcac atctggtgac agatgcctct ggggccgaaa gccaaagggtt aacagaccct 420  
 ataggattgg tttcaaaacc tgaattgatg tggatttgtg atagtacctg ttgatctggt 480  
 aacagtgtca acactagtgt taaggccac gaaggatgcc cagaaggtag ccgtaggtta 540  
 caagtgacac tatggatctg atctggggcc agctacctct atcatggtga gttggttaaa 600  
 aaacgtctag tgggccaaac ccagggggga tccctgggtt ctttttacct aatcaaagcc 660  
 act 663

<210> 28  
 <211> 744  
 <212> DNA  
 <213> Aichi virus

<400> 28  
 tttgaaaagg ggggtgggggg gcctcggccc cctcaccctc ttttccggtg gtctgggtccc 60  
 ggaccaccgt tactccattc agcttcttcg gaacctgttc ggaggaatta aacgggcacc 120  
 catactcccc ccacccccct tttgtaacta agtatgtgtg ctctgatctt tgactccac 180  
 ggaacggacc gatccgttgg tgaacaaaca gctaggtcca catcctcct tcccctggga 240  
 gggcccccg cctcccat cctccccca gcctgacgta tcacaggctg tgtgaagccc 300  
 ccgcgaaagc tgctcacgtg gcaattgtgg gtccccctt catcaagaca ccaggtcttt 360  
 cctccttaag gctagccccg gcgtgtgaat tcacgttggg caactagtgg tgtcactgtg 420  
 cgctcccaat ctggccgagc gagtgctgtt cccaagcca aaccctggc ctttactat 480

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| gtgcctggca agcatatctg agaaggtgtt ccgctgtggc tgccaacctg gtagacaggtg | 540 |
| ccccagtggtg 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> Hepatitis A virus

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| <400> 29                                                           |     |
| ttcaagaggg gtctccggag ttttccggaa cccctcttgg aagtccatgg tgaggggact  | 60  |
| tgataacctca ccgccgtttg cctaggctat aggctaaatt tccctttccc tgtccttccc | 120 |
| ctatttcctt ttgttttgtt tgtaaatatt aattcctgca ggttcagggt tctttaatct  | 180 |
| gtttctctat aagaacactc aatttttcac gctttctgtc tcctttcttc cagggtcttc  | 240 |
| cccttgccct aggctctggc cgttgcgccc ggcggggtca actccatgat tagcatggag  | 300 |
| ctgtaggagt ctaaattggg gacgcagatg tttgggacgt cgccttgcag tgttaaacttg | 360 |
| gctttcatga acctctttga tcttccacaa ggggtaggct acgggtgaaa cctcttaggc  | 420 |
| taatacttca atgaagagat gccttgata gggtaacagc ggcggatatt ggtgagttgt   | 480 |
| taagacaaaa accattcaac gccggaggac tggctctcat ccagtggatg cattgaggga  | 540 |
| attgattgtc agggctgtct ctaggtttta 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:  
 unknown Phopivirus sequence"

<400> 30

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| gggagtaaac ctcaccaccg tttgccgtgg tttacggcta cctatTTTTg gatgtaaata | 60  |
| ttaattcctg caggttcagg tctcttgaat tatgtccacg ctagtggcac tctcttacct | 120 |
| ataagtgacg ccttagcgga acctttctac acttgatgtg gttaggggtt acattatttc | 180 |
| cctgggcctt ctttggccct ttttcccctg cactatcatt ctttcttcg ggctctcagc  | 240 |
| atgccaatgt tccgaccggt gcgcccgcg gggttaactc catggttagc atggagctgt  | 300 |
| aggccctaaa agtgctgaca ctggaactgg actattgaag catacactgt taactgaaac | 360 |
| atgtaactcc aatcgatctt ctacaagggg taggctacgg gtgaaacccc ttaggttaat | 420 |
| actcatattg agagatactt ctgatagggt aaggttgctg gataatggtg agtttaacga | 480 |
| caaaaacat tcaacagctg tgggccaacc tcatcaggta gatgcttttg gagccaagtg  | 540 |
| cgtaggggtg tgtgtggaat tgcttcagtg gaaggtgcc tcccgaagg tcgtaggggt   | 600 |
| aatcaggggc agttagggtt ccacaattac aatttgaa                         | 638 |

<210> 31

<211> 743

<212> DNA

<213> Coxsackievirus A10

<400> 31

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| gctcttccga tctgggttgt tcccaccac agggcccact gggcgccagc actctgattc   | 60  |
| cacggaatct ttgtgcgctt gttttacaac ctttcccaat ttgtaacgta gaagcaatac  | 120 |
| acactactga tcaatagtag gcatggcgcg ccagtcatgt catgatcaag cacttctgtt  | 180 |
| ccccggact gagtatcaat agactgctca cgcggttgaa ggagaaaacg ttcgttacct   | 240 |
| ggctaactac ttcgagaaac ctagtagcac catggaagct gcggagtgtt tcgctcagca  | 300 |
| ctttccccgt gtagatcagg tcgatgagtc actgcaatcc ccacgggcga ccgtggcagt  | 360 |
| ggctgctgtg gcggcctgcc tatggggcaa cccataggac gctctaattg 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 cgggtgtctaa cagagctatt | 660 |
| gtatacctat ttgttggtt tactccccta tcatacaaat ctctgaacac tttgtgcttt   | 720 |

atactgaact taaacacacg aaa

743

<210> 32

<211> 746

<212> DNA

<213> Enterovirus C

<400> 32

|                                                                     |     |
|---------------------------------------------------------------------|-----|
| ttaaaacagc tctgggggttg ttccccacccc agaggcccac gtggcggcca gtacaccggt | 60  |
| accacgggtac ccttgtagcg ctgtttttata 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 gtgggtccagg  | 360 |
| ctgcgttggc ggcctacctg tggtcacaaa ccacaggacg ctagtagtga acaaggtgtg   | 420 |
| aagagcccac tgagctacct gagaatcctc cggcccctga atgcggctaa tcccaaccac   | 480 |
| ggagcaggta atcgcaaacc agcggtcagc ctgtcgtaac gcgtaagtct gtggcggaac   | 540 |
| cgactacttt ggggtgtccgt gtttcctttt atttttatgg tggctgctta tggtgacaat  | 600 |
| catagattgt tatcataaag caaattggat tggccatccg gagttagcta aactatctat   | 660 |
| ttctctgagt gttggattcg tttcaccac attctgaaca atcagcctca ttagtgttac    | 720 |
| cctgttaata agacgatatc atcacg                                        | 746 |

<210> 33

<211> 726

<212> DNA

<213> Enterovirus D

<400> 33

|                                                                     |     |
|---------------------------------------------------------------------|-----|
| ttaaaacagc tctgggggttg ttccccacccc agaggcccac gtggcggcta gtactccggt | 60  |
| accccggtac ccttgtagcg ctgtttttata ctccctttcc caagtaactt tagaagaaat  | 120 |
| aaactaatgt tcaacaggag ggggtacaaa ccagtaccac cacgaacaca cacttctggt   | 180 |
| tccccggtga agttgcatag actgtacca cggttgaaag cgatgaatcc gttacccgct    | 240 |
| taggtacttc gagaagccta gtatcatctt ggaatcttcg atgcgttgcg atcagcactc   | 300 |
| taccccgagt gtagcttggg tcgatgagtc tggacacccc acaccggcga cgtggtccag   | 360 |

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| gctgcttgg cggcctaccc atggctagca ccatgggacg ctagttgtga acaaggtgcg   | 420 |
| aagagcctat tgagctacct gagagtcctc cggcccctga atgcggctaa tcccaaccac  | 480 |
| ggagcaaatg ctcacaatcc agtgagtggg ttgtcgtaat gcgcaagtct gtggcggaac  | 540 |
| cgactacttt ggggtgtccgt gtttcctttt atttttatta tggctgctta tggtgacaat | 600 |
| ctgagattgt tatcatatag ctattggatt agccatccgg tgatatcttg aaattttgcc  | 660 |
| ataacttttt cacaaatcct acaacattac actacacttt ctcttgaata attgagacaa  | 720 |
| ctcata                                                             | 726 |

<210> 34  
 <211> 737  
 <212> DNA  
 <213> Enterovirus J

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| <400> 34                                                          |     |
| ttaaaatagc ctcagggttg ttcccaccct gagggccac gtggtgtagt actctggtat  | 60  |
| tacggtacct ttgtacgcct attttatacc cccttcccca agtaatttag aagcaagcac | 120 |
| aaaccagttc agtagtaagc agtacaatcc agtactgtaa tgaacaagta cttctgttac | 180 |
| cccggaaggg tctatcggtg agctgtaccc acggctgaag aatgacctac cgttaaccgg | 240 |
| ctacctactt cgagaagcct agtaatgccg ttgaagtttt attgacgtta cgctcagcac | 300 |
| actaccccgt gtgtagtttt ggctgatgag tcacggcact cccacgggc gaccgtggcc  | 360 |
| gtggctgcgt tggcggccaa ccaaggagtg caagctcctt ggacgtcata ttacagacat | 420 |
| gggtggaaga gcctattgag ctaggtggta gtcctccggc ccctgaatgc ggctaactct | 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 cttttatta  | 720 |
| gtccttaaata actaaga                                               | 737 |

<210> 35  
 <211> 327  
 <212> DNA  
 <213> Human Pegivirus 2

<400> 35  
aactgttggt gtagcaatgc gcatattgct acttcggtac gcctaattgg taggcgcccc 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  
cccagtggtga cgtccgtgga gcgcaac 327

<210> 36  
<211> 281  
<212> DNA  
<213> GB virus C

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

<210> 37  
<211> 459  
<212> DNA  
<213> GB virus C

<400> 37  
gacgtggggg ggttgatccc ccccctttgg cactgggtgc aagccccaga aaccgacgcc 60  
tatttaaaca gacgttaaga accggcgccg accggcgac cggccaaaag gtggtggatg 120  
ggtgatgcca gggttggtag gtcgtaaatc ccggtcatct tggtagccac tataggtggg 180  
tcttaagggt tggttaaggt ccctctggcg cttgtggcga gaaagcgac ggtccacagg 240  
tggtggccct accggtgtga ataagggcc gacgtcaggc tcgtcgttaa accgagccca 300  
ctaccacact gggcaaaca cgcccacgta cggtcacgt cgcccttcaa tgtctctctt 360  
gaccaatagg cttagccggc gagttgacaa ggaccagtgg gggctgggcg gtaggggaag 420  
gaccctgcc gctgcccttc ccggtggagt gggaaatgc 459

<210> 38  
<211> 350  
<212> DNA  
<213> GB virus C

<400> 38  
tgacgtgggg gggttgatcc gcccccccg gcactcgggtg caagcccat aaaccgacgc 60  
ctatctaagt agacgcaatg actcggcgcc gactcggcga ccggccaaaa ggtggtggat 120  
gggtggtgac agggttggta ggtcgtaaat cccggtcatc ctggtagcca ctataggtgg 180  
gtcttaagag aaggtaaga ctcctcttgt gcctgcggcg agaccgcgca cgggccacag 240  
gtgctggccc taccggtgtg aataagggcc cgacgtcagg ctcgtcgtta aaccgagccc 300  
gtcaccacc 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 actgggggtga 120  
gcggaggcag caccgaagtc ggggtgaactc gactcccagt gcgaccacct ggcttggtcg 180  
ttcatggagg gcatgcccac gggaacgctg atcgtgcaaa gggatgggtc cctgcactgg 240  
tgccatgcgc ggcaccactc cgtacagcct gatagggtgg cggcgggccc cccagtggtg 300  
acgtccgtgg agcgcaac 318

<210> 40  
<211> 399  
<212> DNA  
<213> Pasivirus A

<400> 40  
attttctggc cgtgtagctg cttttgacca gtggctctgg gttacttagc caaatcccc 60  
ttccttcacc cttttaaatt tgatggtctg tgttgtttgt tttgtcttgt ctaaataata 120  
tataagatcc ttcccgcga tacagacctc gacagtctgg tgtaggaggg ttggtgttat 180  
taatttgccc cagaagagt accgtgacac atagaaacca tgagtacatg tgtatccgtg 240  
gaggatcgcc cgggactgga ttccatatcc cattgccatc ccaacaagcg gaggggtatac 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 cttaagggtg ttgtatccca catacccccac 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 atagttagct tccaggttgg gaaacctgga  | 360 |
| ctgggcctat actacctgat agggtcgcgg ctggccgcct gtaactagta tagtcagttg  | 420 |
| aaaccccccc                                                         | 430 |

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

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| <400> 42                                                           |     |
| gtctcttttag tgtctatgct tcagagagcg gtgaactgac accgttgctt cttgcacagc | 60  |
| ccttcgtgcc ggtctttccg gttctcgaca gcgttgggca tcatggctag ttaggctaag  | 120 |
| atagtggatg atctagtga cagttttgga ttgtttggag tttttagtagc atgctagtag  | 180 |
| tgtgtgtgga cctccccacg tggtaacacg tgccccacag gccaaaagcc aaggtgttga  | 240 |
| aagcacccct actagtccca gactcaccca tctgggaact cctctcatga aaaatcttag  | 300 |
| taacttttga ttcggctatt catcaacctc tctagtcaag ggctgaagga tgcccgaag   | 360 |
| gtacccgcag gtaacgataa gctcactgtg gatctgatcc ggggctttgg tgcgaccgtc  | 420 |
| tgtccggcgt agccagagtt aaaaaacgtc taggcccttc caccccaagg gattgggggtt | 480 |
| tccccaatca tttgaaagtt cact                                         | 504 |

<210> 43

<211> 532  
 <212> DNA  
 <213> Bakunsa virus

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

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

<400> 44  
 tttgaaagag gcctccggag tgtccggagg ctctctttcg acccaacca tactgggggg 60  
 tgtgtgggac cgtacctgga gtgcacggta tatatgcatt cccgcatggc aagggcgtgc 120  
 taccttgccc cttgacgcat ggtatgcgtc atcatttgcc ttggttaagc cccatagaaa 180  
 cgaggcgtca cgtgccgaaa atccccttgc gtttcacaga accatcctaa ccatgggtgt 240  
 agtatgggaa tcgtgtatgg ggatgattag gatctctcgt agagggatag gtgtgccatt 300  
 caaatccagg gagtactctg gctctgacat tgggacattt gatgtaaccg gacctggttc 360  
 agtatccggg ttgtcctgta ttgttacggg gtatccgtct tggcacactg aaagggtatt 420  
 tttgggtaat cctttcctac tgcctgata ggtggcgtgc ccggccacga gagattaagg 480  
 gtagcaattt aaac 494

<210> 45  
 <211> 378  
 <212> DNA  
 <213> Swine Pasivirus 1

<400> 45  
gcttttgacc agtggctctg gggtacttag ccaagtcctt ttctcttatt ttcactagtt 60  
tatgttgtgt gttgtctgtt ttgttttgtt taaattgtat acaagatcct tcccgccgac 120  
acagacctcg acagtctggt gtaggagggt tggatgatatt aatttgcccc aaaagagtga 180  
ccgtgatacg tggaaacatc gactacatgt gtatccgtgg aggatcgccc gggactggat 240  
tccatatccc attgccatcc caacaaacgg agggatatacc caccacgtgc gcgtttgcag 300  
tggaatctg caaatttagt catactgcct gatagggtgt gggcctgcac tttggggtag 360  
tcaggctgtt catataat 378

<210> 46  
<211> 319  
<212> DNA  
<213> Parechovirus-like virus PLV-CHN

<400> 46  
acatggggta tgtgtctgtt cctgttttgt tgaaacaata tataagatcc tttccgccga 60  
tatagacctc gacagtctag tgtaggagga ttggtgatag taacttgccc cagaagagtg 120  
accgtgacac atagaaacca tgagtacatg tgtatccgtg gaggatcgcc cgggactgga 180  
ttccatatcc cattgccatc ccaacaaacg gagggatatac ccactatgtg cgcgtttgca 240  
gtgggagcct gcaaatttag tcatactgcc tgatagggtg tgggcctgca ctctggggta 300  
ctcaggctgt ttatataat 319

<210> 47  
<211> 420  
<212> DNA  
<213> Pasivirus A

<400> 47  
tgaaaaagtg gttgtgcagc tggattttcc ggctgtgcaa ctgcttttga ccagtggctc 60  
tggtgtactt 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 agtggaatc tgcaaattta 360  
gtcatactgc ctgatagggt gtgggcctgc actttggggg actcaggctg tttatataat 420

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

<400> 48  
gtgtcattaa ggtgtgtttg gaagttcgaa ttagctgggt tgtggtgatt agtagacccc 60  
ctggaggtac ccaattcgga tctgaccagg gacccgtgac tataaccgctc cggttaattcg 120  
ggtttaaaac aatgaacgtc accacacaat tacttttctc attttatttt catcattgtc 180  
ttcctattta ccgattacac tcgatttcct tggatgttcc tggagatttc cctggttacc 240  
tggaccctca ttattgttgt tgtttcacc agcgagctgt cccaattgct tattattttgc 300  
gcttacaact tcgtcctaata 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 acaccctcc cggaatcctg agtacaggac 120  
attcgctcgg acgacgcatg agcctccatg ccgagaaaat tgggtatacc cacgggtaag 180  
gggtggccac ccagcgggaa tctgggggct ggtcactgac tatggtacag cctgataggg 240  
tgctgccgca gcgtcagtgg tatgcggctg ttcattggaac 280

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

<400> 50  
acctccgtgc taggcacggt gcgttgtcag cgttttgcgc ttgcatgcgc tacacgcgtc 60  
gtccaacgcg gagggaactt cacatcacca tgtgtcactc cccctatgga gggttccacc 120  
ccgcttacac ggaaatgggt taaccatacc caaagtacgg gtatgcgggt cctcctaggg 180  
ccccccggc aggtcgaggg agctggaatt cgtgaattcg tgagtacacg aaaatcgcg 240

|                                                                  |     |
|------------------------------------------------------------------|-----|
| cttgaacgtc tttgaccttc ggagccgaag tttgggcgtg cccacgaag gaaggcgggg | 300 |
| gcggtgttgg gccgccgcc cctttatccc acggtctgat aggatgcttg cgagggcacc | 360 |
| tgccggtctc gtagaccata ggac                                       | 384 |

<210> 51  
 <211> 384  
 <212> DNA  
 <213> Bovine viral diarrhea virus 1

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| <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 |
| acgagggcac gccacagca catcttaacc tggacggggg tcgttcaggt gaaaacggtt  | 300 |
| taaccaaccg ctacgaatac agcctgatag ggtgctgcag agggccactg tattgctact | 360 |
| gaaaatctct gctgtacatg gcac                                        | 384 |

<210> 52  
 <211> 372  
 <212> DNA  
 <213> Border Disease virus

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| <400> 52                                                           |     |
| gtatacggga gtagctcatg cccgtataca aaattggata ttccaaaact cgattgggtt  | 60  |
| aggagagccct cctagcgacg gccgaaccgt gttaaccata cacgtagtag gactagcaga | 120 |
| cgggaggact agccatcgtg gtgagatccc tgagcagtct aaatcctgag tacaggatag  | 180 |
| tcgtcagtag ttcaacgcag gcacggttct gccttgagat gctacgtgga cgagggcacg  | 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> Bovine viral diarrhea virus 2

<400> 53  
gtatacagaga ttagctaaag tactcgtata tggattggac gtcaacaaat ttttaattgg 60  
caacgtaggg aaccttcccc tcagcgaagg ccgaaaagag gctagccatg cccttttagta 120  
ggactagcaa aagtaggggg actagcggta gcagtgagtt cgttggatgg ccgaaccctt 180  
gagtacaggg gagtctcaa tggttcgaca ctccattagt cgaggagtct cgagatgccca 240  
tgtggacgag ggcatgcccc cggcacatct taacccatgc gggggttgca tgggtgaaag 300  
cgctaatcgt ggcgttatgg acacagcctg atagggtgta gcagagacct gctattccgc 360  
tagtaaaaaa ctctgctgta catggcac 388

<210> 54  
<211> 373  
<212> DNA  
<213> Classical swine fever virus

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

<210> 55  
<211> 191  
<212> DNA  
<213> Human blood-associated dicistrovirus

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

<210> 56  
<211> 438

<212> DNA

<213> Hubei Picorna-like virus

<400> 56

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| ccccaaaacc ccccccttaa actcaacact gtagtggatt cattttccgt tgcaaaaaca  | 60  |
| aacattacta cccgcattta tgtaggctct gtgttttcta tgcgaccgtt acattaatct  | 120 |
| ctactctgac ccactagttt ataaaaccga agacctgaat gaaacgattt tccttctttt  | 180 |
| caacctctaa cgaacctctg acggcttgag aaacctgaag ttagtaatta tgtttaaaag  | 240 |
| aaaggaaagt caaacgcat gactcttaca tccctattcc ataccggtgc tccacaatgt   | 300 |
| gagcgatgcg aggtcgggac tgcagtatta ggggaacgag ctacatggag agttaattat  | 360 |
| ctctccccctc ctacgggagt ctcatgtgag ctgtagaaag cggttggcac ctctcgttac | 420 |
| ctcgcctgta catgatcc                                                | 438 |

<210> 57

<211> 193

<212> DNA

<213> Cricket paralysis virus

<400> 57

|                                                                     |     |
|---------------------------------------------------------------------|-----|
| aaaagcaaaa atgtgatctt gcttgtaa atacaattttga gaggttaata aattacaagt   | 60  |
| agtgctatctt ttgtatttag gtttagctatt tagctttacg ttccaggatg cctagtggca | 120 |
| gccccacaat atccaggaag ccctctctgc gggtttttcag attaggtagt cgaaaaacct  | 180 |
| aagaaattta cct                                                      | 193 |

<210> 58

<211> 752

<212> DNA

<213> Salivirus A

<400> 58

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| tttctcctt tcgaccgcct tacggcaggc gggtcgcgg acggcttcgg cctaccgcg    | 60  |
| acaagaatgc cgtcatctgt cttatcacc catattcttt cccttcccc gcaaccatca   | 120 |
| cgcttactcg cgcacgtgtt gaggggcacg tgcgttggtc aaacagttac actcacacc  | 180 |
| ttggggcggg tttgtccgc cctcgggttc ctgcggaac cctccctctt ctctctcct    | 240 |
| ttctatccgc cttcactttc cataactaca gtgctttggt aggtaagcat cctgaccccc | 300 |
| cgcggaagct gccaacgtgg caactgtggg gatccaggca gggttatcaa ggcacccggt | 360 |

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| ctttccgcct tcaggagtat ccctgccggt gaattccgac agggctctgc ttggtgccaa  | 420 |
| cctcccccaa atgcgcgctg cgggagtgct cttccccaac tcattcttagt aacctctcat | 480 |
| gtgtgtgctt ggtcagcata tctgaggcga cgttccgctg tcccagacca gtccagcaat  | 540 |
| ggacgggcca gtgtgcgtag tcgctttccg gtttcccggc gcatgtttgg cgaaacgctg  | 600 |
| aggtaaggtt ggtgtgcccc atgcccgtaa tttggtgaca cctcaagacc acccaggaat  | 660 |
| gccagggagg taccctactt cgggtgggatc tgaccctggg ctaattgtct acggtggttc | 720 |
| ttcttgcttc cacttctctt ttttctggca tg                                | 752 |

<210> 59  
 <211> 708  
 <212> DNA  
 <213> Salivirus A

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| <400> 59                                                          |     |
| tatggcaggc gggcttgtgg acggcttcgg cccaccaca gcaagaatgc catcatctgt  | 60  |
| cctcaccccc atgtttcccc tttctttccc tgcaaccgtt acgcttactc gcaggtgcat | 120 |
| ttgagtgggtg cacgtgttga ataaacagct acactcacat gggggcgggt tttccgccc | 180 |
| tgcggcctct cgcgaggccc acccctcccc ttcctcccat aactacagtg ctttggtagg | 240 |
| taagcatcct gatccccgc ggaagctgct cacgtggcaa ctgtggggac ccagacaggt  | 300 |
| tatcaaaggc acccggctct tccgccttca ggagtatccc tgctagtga ttttagtagg  | 360 |
| gctctgcttg gtgccaacct ccccaaagt cgcgctgcgg gaggctctt ccccaactca   | 420 |
| ccctagtatc ctctcatgtg tgtgcttggt cagcatatct gagacgatgt tccgctgtcc | 480 |
| cagaccagtc cagtaatgga cgggccagtg tgcgtagtcg tcttccggct tttccggcgc | 540 |
| atgtttggtg aaccggtggg gtaaggttgg tgtgcccac gcccgactt tgggtgatacc  | 600 |
| tcaagaccac ccaggaatgc cagggaggta ccccgcttca cagcgggatc tgaccctggg | 660 |
| ctaattgtct acggtggttc ttcttgcttc cacttcttct tactgttc              | 708 |

<210> 60  
 <211> 718  
 <212> DNA  
 <213> Salivirus A

|                                                                  |    |
|------------------------------------------------------------------|----|
| <400> 60                                                         |    |
| tttcgaccgc cttatggcag gcgggcttgt ggacggcttc ggcccacca cagcaagaat | 60 |

|                      |                         |                           |     |
|----------------------|-------------------------|---------------------------|-----|
| gccatcatct gtcctcacc | ccatttctcc ctccttccc    | ctgcaaccat tacgcttact     | 120 |
| cgcatgtgca ttgagtgg  | cacgtgttga acaaacag     | ct acactcacgt gggggcgggt  | 180 |
| tttcccgccc ttcggcct  | ct cgcgaggccc acccttccc | ttcctcccat aactacagt      | 240 |
| ctttggtagg taagcatc  | ct gatcccccgc ggaagctg  | ct cgcgtaggcaa ctgtggggac | 300 |
| ccagacaggt tatcaaag  | gc acccggctct tccgcctca | ggagtatccc tgctagtga      | 360 |
| ttctagtggg gctctgct  | tgt gtgccaacct cccccaa  | atg cgcgctgcgg gagg       | 420 |
| ctctgctctt gagacgat  | gt gagacgatgt           |                           | 480 |
| tccgctgtcc cagaccag  | tc cagcaatgga cgggccag  | tgtgctgtcg tcttccgg       | 540 |
| tggtccggcg atgtttgg  | tg aaccggtagg gtaagg    | ttgtgccaac gcccgtact      | 600 |
| tggtgacaac tcaagacc  | ac ccaggaatgc caggga    | gtgta ccccgctca cggcgggat | 660 |
| tgaccctggg ctaattgt  | ct acggtaggtt ttcttg    | cttc catttctttc ttctgt    | 718 |

<210> 61

<211> 699

<212> DNA

<213> Salivirus A

<400> 61

|                     |                        |                        |              |
|---------------------|------------------------|------------------------|--------------|
| tatggcaggc gggcttgt | gg acggtttcgg cccacc   | caca gcaagaatgc catcat | ctgt 60      |
| cctcaccccc aattttcc | ct ttcttcccct gcaatcat | ca cgcttactcg catgtgc  | att 120      |
| gagtggtgca tgtgttga | ac aaacagctac actcacat | gg gggcgggttt tcccgcc  | cta 180      |
| cggcctctcg cgaggccc | ac cttcccctc cccttata  | ac tacagtgcct tggcagg  | taa 240      |
| gcatcctgat ccccgcg  | ga agctgctcac gtggca   | actg tggggacca gacag   | gttat 300    |
| caaaggcacc cggctctt | cc gccttcagga gcatcccc | ac tagtgaattc tagtggg  | gct 360      |
| ctgcttggtg ccaacctc | cc ccaaatgcgc gctgcgg  | gag tgctcttccc caacc   | catcc 420    |
| tagtatcctc tcatgtgt | gt gcttggtcag catatct  | gag acgacgttcc gctgt   | cccag 480    |
| accagtccag taatggac | gg gccagtgtgc gtagtc   | gtct tccggcttgt ccggc  | gcatg 540    |
| tttggatgaac cggtagg | gtgta aggttgggtgt gcc  | caacgc cgtactttgg tg   | acacctca 600 |
| agaccacca ggaatgcc  | ag ggaggtaccc cgcctca  | gg cgggatctga ccctggg  | gcta 660     |
| attgtctacg gtggttct | tc ttgcttccac ttcttt   | ctt                    | 699          |

<210> 62  
<211> 624  
<212> DNA  
<213> Salivirus A

<400> 62  
ttctcctgca accattacgc ttaatcgcat gtgcattgag tggatgcatgt gttgaacaaa 60  
cagctacaat cacatggggg cgggttttcc cgccccacgg cttctcgcga ggcccatccc 120  
tcccttttct cccataacta cagtgccttg gtaggtaagc atcccgatct cccgcggaag 180  
ctgctcacgt ggcaactgtg gggaccaga caggttatca aaggcaccg gtctttccgc 240  
cttcaggagt atccctgcta gcgaattcta gtagggctct gcttggtgcc aacctctccc 300  
aaatgcgcgc tgcgggagt ctcttcccca aatcaccca gtatcctctc atgtgtgtgc 360  
ctggtcagca tatctgagac gatgttccgc tgtcccagac cagtccagta atggacgggc 420  
cagtgtgcgt agtcgtcctc cggcttgtcc ggcgcattgt tggatgaaccg gtggggtaag 480  
gttggtgtgc ccaacgccc taatcagggg atacctcaag gcaccagga atgccaggga 540  
ggtatccgc ctacagcgg gatctgacc tggggtaaat gtctgcgggg ggtcctcttg 600  
gccaattct cagtaatttt cagg 624

<210> 63  
<211> 650  
<212> DNA  
<213> Salivirus A

<400> 63  
tctgtcctca ccccatcttc ctttcttcc tgcaccgtta cgcttactcg catgtgcatt 60  
gagtggtgca cgtgcttgaa caaacagcta cactcacatg ggggcgggtt ttcccgcct 120  
gcggcctctc gcgaggcca cccctcccct tcctcccata actacagtgc tttggtaggt 180  
aagcatcctg atccccgcg gaagctgctc acgtggcaac tgtggggacc cagacaggtt 240  
atcaaaggca cccggtcttt ccgccttcag gagtatccct gctagtgaat tctagtaggg 300  
ctctgcttgg tgccaacctc ccccaaagtc gcgctgcggg agtgctcttc cccaactcac 360  
cctagtatcc tctcatgtgt gtgcttggtc agcatatctg agacgatgtt ccgctgtccc 420  
agaccagtcc agtaatggac gggccagtgt gcgtagtcgt cttccggctt gtccggcgca 480  
tgtttggtga accggtgggg taaggttggg gtgccaacg cccgtacttt ggtgatacct 540  
caagaccacc caggaatgcc agggaggtac cccgcttcac agcgggatct gaccctgggc 600

taattgtcta cggtggttct tcttgcttcc acttctttct actgttcatg 650

<210> 64

<211> 730

<212> DNA

<213> Salivirus FHB

<400> 64

acatggggggg tctgcggacg gcttcggccc acccgcgaca agaatgccgt catctgtcct 60

cattacccgt attccttccc ttccccgca accaccacgc ttactcgcgc acgtgttgag 120

tggcacgtgc gttgtccaaa cagctacacc cacacccttc ggggcggggtt tgtcccgccc 180

tcgggttcct cgcggaacct cccctccct ctctctcttt ctatccgccc tcacttccca 240

taactacagt gctttggtag gtgagcacc tgaccccccg cggaagctgc taacgtggca 300

actgtgggga tccaggcagg ttatcaaagg caccgggtct ttccgccttc aggagtatct 360

ctgccggtga attccggtag ggctctgctt ggtgccaacc tccccaaat gcgcgctgcg 420

ggagtgtctt tccccactc atcttagtaa cctctcatgt gtgtgcttgg tcagcatatc 480

tgaggcgacg ttccgctgtc ccagaccagt ccagcaatgg acgggccagt gtgcgtagtc 540

gctttccggt tttccggcgc atgtttggcg aaacgctgag gtaagggttg tgtgccaac 600

gcccgtatt tggtgatacc tcaagaccac ccaggaatgc cagggaggta cccacttcg 660

gtgggatctg accctgggct aattgtctac ggtggttctt cttgcttcca cttctctttt 720

ttctggcatg 730

<210> 65

<211> 741

<212> DNA

<213> Coxsackievirus B3

<400> 65

ttaaaacagc ctgtgggttg atcccacca caggcccatt gggcgctagc actctggtat 60

cacggtacct ttgtgcgcct gttttatacc ccctcccca actgtaactt agaagtaaca 120

cacaccgatc aacagtcagc gtggcacacc agccacgttt tgatcaagca cttctgttac 180

cccggactga gtatcaatag actgctcacg cggttgaagg agaaagcggt cgttatccgg 240

ccaactactt cgaaaaacct agtaacaccg tggaagttgc agagtgtttc gctcagcact 300

acccagtgat agatcaggtc gatgagtcac cgcattcccc acgggcgacc gtggcggtgg 360

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| ctgcgttggc ggcctgccc tggggaaacc catgggacgc tctaatacag acatggtgcg   | 420 |
| aagagtctat tgagctagtt ggtagtcctc cggcccctga atgcggctaa tcctaactgc  | 480 |
| ggagcacaca ccctcaagcc agagggcagt gtgtcgtaac gggcaactct gcagcggaac  | 540 |
| cgactacttt ggggtgtccgt gtttcatttt attcctatac tggctgctta tggtgacaat | 600 |
| tgagagatcg ttacatata gctattggat tggccatccg gtgactaata gagctattat   | 660 |
| atatcccttt gttgggttta taccacttag cttgaaagag gttaaaacat tacaattcat  | 720 |
| tgtaagttg aatacagcaa a                                             | 741 |

<210> 66  
 <211> 741  
 <212> DNA  
 <213> Coxsackievirus B1

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| <400> 66                                                           |     |
| ttaaaacagc ctgtgggttg ttcccacca caggcccatt gggcgctagc actctggtat   | 60  |
| cacggtacct ttgtgcgcct gttttacatc ccctcccaa attgtaattt agaagtttca   | 120 |
| cacaccgatc attagcaagc gtggcacacc agccatgttt tgatcaagca cttctgttac  | 180 |
| cccggactga gtatcaatag accgctaacg cggttgaagg agaaaacgtt cgttaccg    | 240 |
| ccaactactt cgaaaaacct agtaacacca tggaagttgc ggagtgtttc gctcagcact  | 300 |
| acccagtgat 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 ggggtgtccgt gtttcatttt attcctatac tggctgctta tggtgacaat | 600 |
| tgacaggttg ttacatata gttattggat tggccatccg gtgactaaca gagcaattat   | 660 |
| atatctcttt gttgggttta taccacttag cttgaaagag gttaaaacac tacatctcat  | 720 |
| cattaaacta aatacaacaa a                                            | 741 |

<210> 67  
 <211> 742  
 <212> DNA  
 <213> Echovirus 7

<400> 67

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| ttaaaacagc ctgtgggttg ttccaccca cagggcccat tgggcgtcag caccctggta  | 60  |
| tcacggtacc tttgtgcgcc tgttttatat cccttcccc aattgtaact tagaagaaac  | 120 |
| acacaccgat caacagcaag cgtggcacac cagccatggt 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 tggatttcct ccggcccctg aatgcggcta atcctaactg | 480 |
| tggagcacat gcccctaata caaggggtag tgtgtcgtaa tgagcaattc cgcagcggaa | 540 |
| ccgactactt tgggtgtccg tgtttcctct tattcttgta ctggctgctt atggtgacaa | 600 |
| ttgagagatt gttaccatat agctattgga ttggccatcc ggtgactaat agagctattg | 660 |
| tgtatctctt tgttggattt gtaccactta atttgaaaga aatcaggaca ctacgtaca  | 720 |
| ttttactatt gaacaccgca aa                                          | 742 |

<210> 68

<211> 743

<212> DNA

<213> Coxsackievirus B5

<400> 68

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| ttaaaacagc ctgtgggttg taccaccca cagggccac tgggcgctag cactctggta    | 60  |
| tcacggtacc tttgtgcgcc tgttttatgc ccccttcccc caattgaaac ttagaagtta  | 120 |
| cacacaccga tcaacagcgg gcgtggcata ccagccgcgt cttgatcaag cactcctgtt  | 180 |
| tccccggacc gagtatcaat agactgctca gcggttgaa ggagaaaacg ttcgttacct   | 240 |
| ggctaactac ttcgagaaac ctagtagcat catgaaagtt gcgaagcgtt tcgctcagca  | 300 |
| catccccagt gtagatcagg tcgatgagtc accgcattcc ccacgggcga ccgtggcggg  | 360 |
| ggctgcgttg gcggcctgcc tacggggcaa cccgtaggac gcttcaatac agacatgggtg | 420 |
| cgaagagtcg attgagctag ttagtagtcc tccggcccct gaatccggct aatcctaact  | 480 |
| gcggagcaca taccctcaac ccagggggca ttgtgtcgta acgggtaact ctgcagcggg  | 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> Enterovirus A71

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| <400> 69                                                           |     |
| ttaaaacagc ctgtgggttg caccactca cagggccac tgggcgcaag cactctggca    | 60  |
| cttcggtacc tttgtgcgcc tgttttatat cccctcccc 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 gtggcgggtgg | 360 |
| ctgcgttggc ggcctgccc tggggtaacc catgggacgc tctaatacgg acatggtgtg   | 420 |
| aagagtctac tgagctagtt agtagtcctc cggcccctga atgcggctaa tcccaactgc  | 480 |
| ggagcacacg cccacaagcc agtgggtagt gtgtcgtaac gggcaactct gcagcggaac  | 540 |
| cgactacttt ggggtgtccgt gtttcctttt attcttatgt tggctgctta tggtgacaat | 600 |
| taaagagttg ttaccatata gctattggat tggccatccg gtgtgcaaca gagcgatcgt  | 660 |
| ttacctatth attggttttg taccattgac actgaagtct gtgatcacc ttaattttat   | 720 |
| cttaaccctc aacacagcca aac                                          | 743 |

<210> 70  
 <211> 742  
 <212> DNA  
 <213> Coxsackievirus A3

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| <400> 70                                                          |     |
| ttaaaacagc ctgtgggttg taccaccca cagggccac tgggcgctag cacactggta   | 60  |
| ttacggtacc tttgtgcgcc tgttttatac ccccccaac ctcgaaactt agaagtaaag  | 120 |
| caaaccgat caatagcagg tgcgggcgcac cagtcgcatc ttgatcaagc acttctgtaa | 180 |
| ccccggaccg agtatcaata gactgctcac gcggttgaag gagaaaacgt tcgttaccg  | 240 |

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| gctaactact tcgagaaacc cagtagcatc atgaaagttg cagagtgttt cgctcagcac  | 300 |
| tacccccgtg tagatcaggc cgatgagtca ccgcacttcc ccacgggcga ccgtggcggt  | 360 |
| ggctgcgttg gcggcctgcc tatggggcaa cccataggac gctctaatac ggacatgggtg | 420 |
| cgaagagtct attgagctag ttagtagtcc tccggcccct gaatgcggct aatcctaact  | 480 |
| gcggagcaca tacccttaat ccaaaggga gtgtgtcgta acgggtaact ctgcagcgga   | 540 |
| accgactact ttgggtgtcc gtgtttcctt ttaattttta ctggctgctt atggtgacaa  | 600 |
| ttgaggaatt gttgcatat agctattgga ttggccatcc ggtgactaac agagctattg   | 660 |
| tgttccaatt tgttggattt accccgctca cactcacagt cgtaagaacc cttcattacg  | 720 |
| tgttatttct caactcaaga aa                                           | 742 |

<210> 71

<211> 745

<212> DNA

<213> Coxsackievirus A12

<400> 71

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| ttaaaacagc ctgtgggttg taccaccca cagggccac tgggcgctag cactctggta    | 60  |
| ctacggtacc tttgtgtgcc tgttttaagc ccctaccccc cactcgtaac ttagaaggct  | 120 |
| tctcacactc gatcaatagt aggtgtggca cgccagtcac accgtgatca agcacttctg  | 180 |
| ttacccccgt ctgagtacca ataagctgct aacgcggctg aaggggaaaa cgatcgttat  | 240 |
| ccggctaact acttcgagaa acccagtacc accatgaacg ttgcagggtg tttcgctcgg  | 300 |
| cacaaccca gtgtagatca ggtcgatgag tcaccgtatt cccacgggc gaccgtggcg    | 360 |
| gtggctgcgt tggcggcctg cccatggggt gacccatggg acgctctaact actgacatgg | 420 |
| tgcgaagagt ctattgagct agttagtagt cctccggccc ctgaatgcgg ctaatcctaa  | 480 |
| ctgcggagca cataccctta atccaaaggg cagtgtgtcg taacgggcaa ctctgcagcg  | 540 |
| gaaccgacta ctttgggtgt ccgtgtttcc ttttattctt acattggctg cttatgggtga | 600 |
| caattgaaaa gttgttacca tatagctatt ggattggcca tccggtgaca aatagagcta  | 660 |
| ttgtatatct ttttgttgggt tacgtacccc ttaattacaa agtggtttca actttgaaat | 720 |
| acatcctaac actaaattgt agaaa                                        | 745 |

<210> 72

<211> 742

<212> DNA

<213> Echovirus E24

<400> 72

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| ttaaaacagc ctgtgggttg cacccaccca cagggcccac agggcgctag cactctggtg | 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 caggggggtg 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 ttaagtgga tgctctcaaa ctcagggaac ctaaattcta gttatagaca  | 60  |
| aggcaatcct gagccaagcc gaagtagtaa ttagtaagtt aacaatagat gacttacaac | 120 |
| taatcggaag gtgcagagac tcgacgggag ctaccctaac gtcaagacga gggtaaagag | 180 |
| agagtccaat tctcaaagcc aataggcagt agcgaaagct gcaagagaat gaaaatccgt | 240 |

<210> 74

<211> 239

<212> DNA

<213> Anabaena sp.

<400> 74

|                                                                   |    |
|-------------------------------------------------------------------|----|
| aagaaattct ttaagtggat gctctcaaac tcagggaac ctaaattctag 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<br>agaaattctt taagtggatg ctctcaaact cagggaacc 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<br>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<br>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 gccaaagccga agtagtaatt agtaagttaa caatagatga 60

cttacaacta atcggaaggt gcagagactc gacgggagct accctaactg caagacgagg 120

gtaaagagag agtccaattc tcaaagccaa taggcagtag cgaaagctgc aagagaatga 180

aatccgt 188

<210> 79

<211> 187

<212> DNA

<213> *Anabaena* sp.

<400> 79

atagacaagg caatcctgag ccaagccgaa gtagtaatta gtaagttaac aatagatgac 60

ttacaactaa tcggaaggtg cagagactcg acgggagcta ccctaactgc 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 cctaactgca agacgagggg 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  
gacgagggt 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 actaatcggg aggtgcagag actcgacggg agctacccta acgtcaagac 60  
gagggtaaaag agagagtcca attctcaaag ccaataggca gtagcgaaag ctgcaagaga 120  
atgaaaatcc gt 132

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

<400> 89  
tgacttacao ctaatcggaa ggtgcagaga ctcgacggga gctaccctaa cgtcaagacg 60  
agggtaaaaga gagagtcaa 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  
 agacgaggggt aaagagagag tccaattctc aaagccaata ggcagtagcg aaagctgcaa 60  
 gagaatgaaa atccgt 76

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

<400> 93  
 gacgagggt 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                              |    |
| gtagcgaaa 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  
gggaaacctt 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  
gggaaacctt 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  
gggaaacctt 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  
gggaaacctta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag 120  
taagttaaca atagatgact tacaactaat cggaaggtgc agagactcga cgggagctac 180  
cctaactgtca agacgaggggt aaagagagag tccaattctc aaagccaata 230

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

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

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

<400> 140  
acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca 60  
gggaaacctta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag 120  
taagttaaca atagatgact tacaactaat cggaaggtgc agagactcga cgggagctac 180  
cctaactgtca agacgaggggt aaagagagag tccaattctc aaagccaata ggcagtagcg 240

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

<400> 141  
acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca 60  
gggaaacctta 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  |
| gggaaacctta 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  |
| gggaaacctta 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  |
| gggaaacctta 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  |
| gggaaacctta 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  |
| gggaaacctta 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  |
| gggaaacctta 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  
gggaaacctta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag 120  
taagttaaca atagatgact tacaactaat cggaagggtgc agagactcga cgggagctac 180  
cctaactgca agacgagggt aaagagagag tccaattctc aaagccaata g 231

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

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

<210> 150  
<211> 234  
<212> DNA  
<213> *Anabaena* sp.

<400> 150  
acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca 60  
gggaaacctta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag 120  
taagttaaca atagatgact tacaactaat cggaagggtgc agagactcga cgggagctac 180  
cctaactgca agacgagggt aaagagagag tccaattctc aaagccaata ggca 234

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

<400> 151  
tgcgccgatg aaggtgtaga gactagacgg caccaccta aggcaaacgc tatggtgaag 60

gcatagtcca gggagtggcg aaagtcacac aaaccggaat ccgt 104

<210> 152

<211> 141

<212> DNA

<213> Azoarcus sp.

<400> 152

ccgggcgatat 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 tccaggaggat ggcgaaagtc 60

acacaaaccg gaatccgt 78

<210> 154

<211> 58

<212> DNA

<213> Azoarcus sp.

<400> 154

acgctatggt gaaggcatag tccaggaggat ggcgaaagtc acacaaaccg gaatccgt 58

<210> 155

<211> 75

<212> DNA

<213> Thiomargarita sp.

<400> 155

attaaagtta tagaattatc agagaatgat atagtccaag ctttatggta acatgagggc 60

acttgaccct ggtag 75

<210> 156

<211> 195

<212> DNA

<213> Staphylococcus virus Twort

<400> 156

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| aagatgtagg caatcctgag ctaagctctt agtaataaga gaaagtgcaa cgactattcc  | 60  |
| gataggaagt aggggtcaagt gactcgaaat ggggattacc cttctagggt agtgatatag | 120 |
| tctgaacata tatggaaaca tatagaagga taggagtaac gaacctattc gtaacataat  | 180 |
| tgaactttta gttat                                                   | 195 |

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

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| <400> 157                                                         |     |
| taataagaga aagtgcaacg actattccga taggaagtag ggtcaagtga ctcgaaatgg | 60  |
| ggattaccct tctagggtag tgatatagtc tgaacatata tggaaacata tagaaggata | 120 |
| ggagtaacga acctattcgt aacataattg aacttttagt tat                   | 163 |

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

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| <400> 158                                                         |     |
| taggaagtag ggtcaagtga ctcgaaatgg ggattaccct tctagggtag tgatatagtc | 60  |
| tgaacatata tggaaacata tagaaggata ggagtaacga acctattcgt aacataattg | 120 |
| aacttttagt tat                                                    | 133 |

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

|                                                                   |    |
|-------------------------------------------------------------------|----|
| <400> 159                                                         |    |
| 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> Bacteriophage Phi I

<400> 161  
 caaagactga tgatatagtc cgacactcct agtaatagga gaatacagaa aggatgaaat 60  
 cc 62

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

<400> 162  
 agtcgagggt aaaggagag tccaattctc aaagcctatt ggcagtagcg aaagctgcgg 60  
 gagaatgaaa atccgt 76

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

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

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

<400> 164  
 agccgagggt aaaggagag 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 tcggcgccctg 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 gtgtcccca gactggtgac agtctggtgt gcatccagct 60  
atatcggatga aacccattg 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  
attcaggga cacctaaaca aact 84

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

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

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

<400> 174  
actactgaaa gcataaataa ttgtgccttt atacagtaat gtatatcgaa aaatcctcta 60  
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> Bacteriophage Phi I

<400> 177  
gtgggtgcat aaactatttc attgtgcaca ttaaactctgg tgaactcggg gaaaccctaa 60  
tggggcaata ccgagccaag ccatagggag gatatatgag aggcaagaag ttaattcttg 120  
aggccactga gactggctgt atcatcccta cgtcacacaa acttaatgcc gatgggttatt 180

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| tcagaaagaa aaccaatggc gtcttagaga tgtatcacag aacggtgtgg aaggagcata | 240 |
| acggagacat acctgatggc ttcgagatag accataagtg tcgcaatagg gcttgctgta | 300 |
| atatagagca tttacagatg cttgagggtta cagccacac tgttaagacc aatcgtgaac | 360 |
| gctacgcaga cagaaaggaa acagctaggg aatactggct ggagactgga tgtaccggcc | 420 |
| tagcactcgg tgagaagttt ggtgtgtcgt tctcttctgc ttgtaagtgg attagagaat | 480 |
| ggaaggcgta gagactatcc gaaaggagta gggccgaggg tgagactccc tcgtaaccgc | 540 |
| aagcgccaga cagtcaact                                              | 559 |

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

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| <400> 178                                                         |     |
| acggacttaa gtaattgagc cttaaagaag aaattcttta agtggcagct ctcaaactca | 60  |
| gggaaacctt aatctgttca cagacaaggc aatcctgagc caagccgaaa gagtcattag | 120 |
| tgctgagtag tgagtataat aaaagctcac aactcagagg ttgtaactct aagctagtcg | 180 |
| gaagggtcag 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 gccaaagccga 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  |
| gggaaacctt 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 taccttttac cttgaaagga aggtgcagag actcaacggg agctacccta | 180 |
| acaggtca                                                          | 188 |

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

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| <400> 182                                                         |     |
| acggacttaa agataaattg agccttgagg cgagaaatct ctcaagtgtg 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 cggaagggtgc 60  
agagactcga cgggagctac cctaactgtca 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  
cggaagggtgc agagactcga cgggagctac cctaactgtca 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 cggaagggtgc agagactcga cgggagctac cctaactgtca agacgagggt 120  
aaagagagag tccaattctc aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa 180

atccgtggct cgcagc 196

<210> 187  
<211> 206  
<212> DNA  
<213> Artificial Sequence

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

<400> 187  
catcaacaat atgaaactat acttatactc agtatatgaa gcattatcgc aaacaaacca 60  
ctagatgact tacaactaat cggaaggtgc agagactcga cgggagctac cctaactgca 120  
agacgagggt aaagagagag tccaattctc aaagccaata ggtagtagcg aaagctgcaa 180  
gagaatgaaa atccgtggct cgcagc 206

<210> 188  
<211> 166  
<212> DNA  
<213> Artificial Sequence

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

<400> 188  
tagcgtcagc aaacaaacaa atagatgact tacaactaat cggaaggtgc agagactcga 60  
cgggagctac cctaactgca agacgagggt aaagagagag tccaattctc aaagccaata 120  
ggtagtagcg 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  
atactcatag tagcgtcagc aaacaaacaa atagatgact tacaactaat cggaaggtgc 60

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| agagactcga cgggagctac cctaactgca agacgagggt aaagagagag tccaattctc | 120 |
| aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa atccgtggct cgcagc     | 176 |

<210> 190  
 <211> 186  
 <212> DNA  
 <213> Artificial Sequence

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

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| <400> 190                                                         |     |
| gtgtgaagct atactcatac tagcgtcagc aaacaaacaa atagatgact tacaactaat | 60  |
| cggaaggtgc agagactcga cgggagctac cctaactgca agacgagggt aaagagagag | 120 |
| tccaattctc aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa atccgtggct | 180 |
| cgcagc                                                            | 186 |

<210> 191  
 <211> 196  
 <212> DNA  
 <213> Artificial Sequence

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

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| <400> 191                                                         |     |
| cctcacctga gtgtgaagct atactcatac tagcgtcagc aaacaaacaa atagatgact | 60  |
| tacaactaat cggaaggtgc agagactcga cgggagctac cctaactgca agacgagggt | 120 |
| aaagagagag tccaattctc aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa | 180 |
| atccgtggct cgcagc                                                 | 196 |

<210> 192  
 <211> 206  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 192  
ccgaatgatg cctcacctga gtgtgaagct atactcatac tagcgtcagc aaacaaacaa 60  
atagatgact tacaactaat cggaaggtgc agagactcga cgggagctac cctaactgca 120  
agacgagggt aaagagagag tccaattctc aaagccaata ggcagtagcg aaagctgcaa 180  
gagaatgaaa atccgtggct cgcagc 206

<210> 193  
<211> 166  
<212> DNA  
<213> Artificial Sequence

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

<400> 193  
cgggtgcgagc aaacaaacaa atagatgact tacaactaat cggaaggtgc agagactcga 60  
cgggagctac cctaactgca 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 cctaactgca 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 cctaactgca agacgagggt aaagagagag 120

tccaattctc aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa atccgtggct 180

cgcagc 186

<210> 196

<211> 186

<212> DNA

<213> Artificial Sequence

<220>

<221> source

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

<400> 196

ctgaaaatat actaatactc actatatgac aaacaaacca ctagatgact tacaactaat 60

cggaaggtgc agagactcga cgggagctac cctaactgca agacgagggt aaagagagag 120

tccaattctc aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa atccgtggct 180

cgcagc 186

<210> 197

<211> 186

<212> DNA

<213> Artificial Sequence

<220>

<221> source

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

<400> 197

ctgataatat agtaatactc actatatgac aaacaaacca ctagatgact tacaactaat 60

cggaaggtgc agagactcga cgggagctac cctaactgca agacgagggt aaagagagag 120

tccaattctc aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa atccgtggct 180

cgcagc 186

<210> 198

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

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

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

<210> 199  
<211> 186  
<212> DNA  
<213> Artificial Sequence

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

<400> 199  
ctgaaattat acttatactc tctaagttac aaacaaacca ctagatgact tacaactaat 60  
cggaagggtgc agagactcga cgggagctac cctaactgca agacgagggt aaagagagag 120  
tccaattctc aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa atccgtggct 180  
cgcagc 186

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

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

<400> 200  
ctgaaattat gtgtgttaca tctaagttac aaacaaacca ctagatgact tacaactaat 60  
cggaagggtgc agagactcga cgggagctac cctaactgca agacgagggt aaagagagag 120

tccaattctc aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa atccgtggct 180  
cgcagc 186

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

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

<400> 201  
gttgatcggg gtgtgttaca tctaagttac aaacaaacca ctagatgact tacaactaat 60  
cggaaggtgc agagactcga cgggagctac cctaactgca agacgagggt aaagagagag 120  
tccaattctc aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa atccgtggct 180  
cgcagc 186

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

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

<400> 202  
ctgaaattat acttatactc agtatatgac aaacaaacca ctagatgact tacaactaat 60  
cggaaggtgc agagactcga cgggagctac cctaactgca 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 cctaactgtca 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 cctaactgtca agacgagggt aaagagagag 120  
tccaattctc aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa atccgtggat 180  
catagc 186

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

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

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

<210> 206  
<211> 196  
<212> DNA

<213> Artificial Sequence

<220>

<221> source

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

<400> 206

ctgaaattat acttatactc agtatatgac aaacaaacca ctagatgact tacaactaat 60

cggaaggtgc agagactcga cgggagctac cctaactgca agacgagggt aaagagagag 120

tccaattctc aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa atccgtggct 180

cgcagcgcg ctagcg 196

<210> 207

<211> 219

<212> DNA

<213> Artificial Sequence

<220>

<221> source

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

<400> 207

ctgaaattat acttatactc agtatatgac aaacaaacca ctagatgact tacaactaat 60

cggaaggtgc agagactcga cgggagctac cctaactgca agacgagggt aaagagagag 120

tccaattctc aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa atccgtggct 180

cgtagcgcg ctagcgaaag ccggcgtagc cgttagcgcg 219

<210> 208

<211> 219

<212> DNA

<213> Artificial Sequence

<220>

<221> source

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

<400> 208

ctgaaattat acttatactc agtatatgac aaacaaacca ctagatgact tacaactaat 60

cggaaggtgc agagactcga cgggagctac cctaactgca agacgagggt aaagagagag 120

tccaattctc aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa atccgtggat 180

cgcagcataa tatccgaaac gaggatacaa gtgacatgc 219

<210> 209  
<211> 219  
<212> DNA  
<213> Artificial Sequence

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

<400> 209  
ctgaaattat acttatactc agtatatgac aaacaaacca ctagatgact tacaactaat 60  
cggaaggtgc agagactcga cgggagctac cctaactgca agacgagggt aaagagagag 120  
tccaattctc aaagccaata ggcagtagcg aaagctgcaa gagaatgaaa atccgtgatt 180  
cacaatctaa attacgaaac gataaatgat aactctaac 219

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

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

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

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

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

<400> 211  
cgggcaaaca aacaaataga tgacttaca ctaatcgga ggtgcagaga ctcgacggga 60

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| gctaccctaa cgtcaagacg agggtaaaga 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>  
 <221> source  
 <223> /note="Description of Artificial Sequence: Synthetic  
 oligonucleotide"

<400> 219  
 gtgtgaagct atactcatac tagcgtcagc aaacaaacaa aggcagtagc gaaagctgca 60  
 agagaatgaa aatccgtggc tcgcagc 87

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

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

<400> 220  
 cgggtgcgagc aaacaaacaa aggcagtagc gaaagctgca agagaatgaa aatccgtggc 60  
 tcgcagc 67

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

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

<400> 221

cgctccgacc cagtgcgagc aaacaaacaa aggcagtagc gaaagctgca agagaatgaa 60  
aatccgtggc tcgcagc 77

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

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

<400> 222  
cgctccgacg agcttccggc cagtgcgagc aaacaaacaa aggcagtagc gaaagctgca 60  
agagaatgaa aatccgtggc tcgcagc 87

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

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

<400> 223  
aaacaaacca caagacgagg gtaaagagag agtccaattc tcaaagccaa taggcagtag 60  
cgaaagctgc aagagaatga aaatccgtgg ctcgcagc 98

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

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

<400> 224  
agtatataag aaacaaacca caagacgagg gtaaagagag agtccaattc tcaaagccaa 60  
taggcagtag cgaaagctgc aagagaatga aaatccgtgg ctcgcagc 108

<210> 225

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

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

<400> 225  
ctgaaattat acttatactc aaacaaacca caagacgagg gtaaagagag agtccaattc 60  
tcaaagccaa taggcagtag cgaaagctgc aagagaatga aaatccgtgg ctcgcagc 118

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

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

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

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

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

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

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

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

<400> 228  
 atactcatac tagcgtcagc aaacaaacaa aaagacgagg gtaaagagag agtccaattc 60  
 tcaaagccaa taggcagtag cgaaagctgc aagagaatga aaatccgtgg ctgcgagc 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  
 ctgcgagc 128

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

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

<400> 230  
 cgggtgcgagc aaacaaacaa aaagacgagg gtaaagagag agtccaattc tcaaagccaa 60  
 taggcagtag cgaaagctgc aagagaatga aaatccgtgg ctgcgagc 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 agcttcggc cagtgcgagc aaacaaacaa aaagacgagg gtaaagagag 60  
agtccaattc tcaaagccaa taggcagtag cgaaagctgc aagagaatga aaatccgtgg 120  
ctcgcagc 128

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

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

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

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

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

<400> 234

ctgaaattat acttatactc agtatatgac aaacaaacca cggcagtagc gaaagctgca 60  
agagaatgaa aatccgt 77

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

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

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

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

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

<400> 236  
ctgaaattat acttatactc agtatatgac aaacaaacca cggcagtagc gaaagctgca 60  
agagaatgaa aatccgtgat tcacaatata aattacg 97

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

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

<400> 237  
ctgaaattat acttatactc agtatatgac aaacaaacca cggcagtagc gaaagctgca 60  
agagaatgaa aatccgtgga tcatagc 87

<210> 238

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

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

<400> 238  
ctgaaattat acttatactc agtatatgac aaacaaacca cggcagtagc gaaagctgca 60  
agagaatgaa aatccgtgga tcgcagcata atatccg 97

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

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

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

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

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

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

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

<220>  
<221> source

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

<400> 241

ctgaaattat acttatactc agtatatgac aaacaaacca caagacgagg gtaaagagag 60

agtccaattc tcaaagccaa taggcagtag cgaaagctgc aagagaatga aaatccgtga 120

ttaaacag 128

<210> 242

<211> 138

<212> DNA

<213> Artificial Sequence

<220>

<221> source

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

<400> 242

ctgaaattat acttatactc agtatatgac aaacaaacca caagacgagg gtaaagagag 60

agtccaattc tcaaagccaa taggcagtag cgaaagctgc aagagaatga aaatccgtga 120

ttcacaatat aaattacg 138

<210> 243

<211> 128

<212> DNA

<213> Artificial Sequence

<220>

<221> source

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

<400> 243

ctgaaattat acttatactc agtatatgac aaacaaacca caagacgagg gtaaagagag 60

agtccaattc tcaaagccaa taggcagtag cgaaagctgc aagagaatga aaatccgtgg 120

atcatagc 128

<210> 244

<211> 138

<212> DNA

<213> Artificial Sequence

<220>

<221> source

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

<400> 244

ctgaaattat acttatactc agtatatgac aaacaaacca caagacgagg gtaaagagag 60

agtccaattc tcaaagccaa taggcagtag cgaaagctgc aagagaatga aaatccgtgg 120

atcgagcat aatatccg 138

<210> 245

<211> 138

<212> DNA

<213> Artificial Sequence

<220>

<221> source

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

<400> 245

ctgaaattat acttatactc agtatatgac aaacaaacca caagacgagg gtaaagagag 60

agtccaattc tcaaagccaa taggcagtag cgaaagctgc aagagaatga aaatccgtgg 120

ctcgagcgc 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

ctcaaaactca 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 aagtcataa 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 aagtcataa 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 ggcattcattc gg 202

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

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

<400> 256  
gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60  
ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120  
tagtaattag taagttaaca aaacaaaaac aagctcgac cg 162

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

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

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

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

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

<400> 258  
gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60

ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120  
tagtaattag taagttaaca acacaaacac aagtcataa 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  
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ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120  
tagtaattag taagttaaca acacaaacac aagtcataa 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  
gctgagagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60  
ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120  
tagtaattag taagttaaca acacaaacac aagtcataa 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 aagtcataa 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 aagtcataa ctgagtataa gtataatttc 180  
ag 182

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

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

<400> 266  
cgtaatttat attgtgaatc acggacttaa ataattgagc cttaaagaag aaattcttta 60  
agtggatgct ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc 120

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| caagccgaag tagtaattag taagttaaca acacaaacac aagtcataata ctgagtataa | 180 |
| gtataatttc ag                                                      | 192 |

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

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

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| <400> 267                                                          |     |
| gctatgatcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct  | 60  |
| ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag  | 120 |
| tagtaattag taagttaaca acacaaacac aagtcataata ctgagtataa gtataatttc | 180 |
| ag                                                                 | 182 |

<210> 268  
 <211> 192  
 <212> DNA  
 <213> Artificial Sequence

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

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| <400> 268                                                          |     |
| cggatattat gctgcatcc acggacttaa ataattgagc cttaaagaag aaattcttta   | 60  |
| agtggatgct ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc  | 120 |
| caagccgaag tagtaattag taagttaaca acacaaacac aagtcataata ctgagtataa | 180 |
| gtataatttc ag                                                      | 192 |

<210> 269  
 <211> 192  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 269  
 cggtaggcgc gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta 60  
 agtggatgct ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc 120  
 caagccgaag tagtaattag taagttaaca acacaaacac aagtcataata ctgagtataa 180  
 gtataatttc ag 192

<210> 270  
 <211> 215  
 <212> DNA  
 <213> Artificial Sequence

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

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

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

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

<400> 271  
 gcatgtcact tgtatcctcg aaacggatat tatgctgcga tccacggact taaataattg 60  
 agccttaaag aagaaattct ttaagtggat gctctcaaac tcagggaac ctaaattctag 120  
 ttatagacaa ggcaatcctg agccaagccg aagtagtaat tagtaagtta acaacacaaa 180  
 cacaagtcata 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

gtagagtta tcatttatcg aaacgtaatt tagattgtga atcacggact taaataattg 60

agccttaaag aagaaattct ttaagtggat gctctcaaac tcagggaac ctaaattctag 120

ttatagacaa ggcaatcctg agccaagccg aagtagtaat tagtaagtta acaacacaaa 180

cacaagtcac atactgagta taagtataat ttcag 215

<210> 273

<211> 152

<212> DNA

<213> Artificial Sequence

<220>

<221> source

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

<400> 273

gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60

ctcaaactca 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 aagccccg 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 aagctcgac tggccggaag ctcgtcggag 180  
cg 182

<210> 276  
<211> 251  
<212> DNA  
<213> Artificial Sequence

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

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

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| ctcaaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag | 120 |
| tagtaattag taagttaaca atagatgact tacaactaat cggaagggtgc agagactcga | 180 |
| cgggagctac cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaata  | 240 |
| cacaaacaca acttatatac t                                            | 261 |

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

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

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| <400> 278                                                          |     |
| gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct  | 60  |
| ctcaaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag | 120 |
| tagtaattag taagttaaca atagatgact tacaactaat cggaagggtgc agagactcga | 180 |
| cgggagctac cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaata  | 240 |
| cacaaacaca agagtataag tataatttca g                                 | 271 |

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

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

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

<210> 280

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

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

<400> 280  
gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60  
ctcaaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120  
tagtaattag taagttaaca atagatgact tacaactaat cggaaggtgc agagactcga 180  
cgggagctac cctaactgca 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  
ctcaaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120  
tagtaattag taagttaaca atagatgact tacaactaat cggaaggtgc agagactcga 180  
cgggagctac cctaactgca 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  |
| ctcaaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag | 120 |
| tagtaattag taagttaaca atagatgact tacaactaat cggaagggtgc agagactcga | 180 |
| cgggagctac cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaata  | 240 |
| aacaaaaaca agctgacgct agtatgagta tagcttcaca c                      | 281 |

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

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

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct  | 60  |
| ctcaaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag | 120 |
| tagtaattag taagttaaca atagatgact tacaactaat cggaagggtgc agagactcga | 180 |
| cgggagctac cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaata  | 240 |
| aacaaaaaca agctcgacc g                                             | 261 |

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

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

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

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

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

<400> 285  
gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60  
ctcaaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120  
tagtaattag taagttaaca atagatgact tacaactaat cggaaggtgc agagactcga 180  
cgggagctac cctaactgca agacgagggt aaagagagag tccaattctc aaagccaata 240  
aacaaaaaca agctcgact ggccggaagc tcgtcggagc g 281

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

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

<400> 286  
gctgcgagcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60  
ctcaaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120  
tagtaattag taagttaaca atagatgact tacaactaat cggaaggtgc agagactcga 180  
cgggagctac cctaactgcc 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  |
| ctcaaaactca 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  |
| ctcaaaactca 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  |
| ctcaaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag | 120 |
| tagtaattag taagttaaca atagatgact tacaactaat cggaaggtgc agagactcga  | 180 |
| cgggagctac cctaacgtcc acaaacacaa gtcataact gagtataagt ataatttcag   | 240 |

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

<220>  
 <221> source  
 <223> /note="Description of Artificial Sequence: Synthetic  
 polynucleotide"  
  
 <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 gctcgactg gccggaagct cgtcggagcg  | 240 |

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

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

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| <400> 296                                                         |     |
| acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca | 60  |
| gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag | 120 |
| taagttaaca acacaaacac aagtcataata ctgagtataa gtataatttc ag        | 172 |

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

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

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| <400> 297                                                         |     |
| acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct ctcaaactca | 60  |
| gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag tagtaattag | 120 |
| taagttaaca atagatgact tacaactaat cggaaggtgc agagactcga cgggagctac | 180 |
| cctaacgtca agacgagggt aaagagagag tccaattctc aaagccaata cacaacaca  | 240 |
| agtcataatac 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 gtcataact gagtataagt ataatttcag 230

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

<220>  
 <221> source  
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"  
  
 <400> 304  
 ctgtttaatc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60  
 ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120  
 tagtaattag taagttaaca atagatgact tacaactaat cggaaggtgc agagactcga 180  
 cgggagctac cctaacgtcc acaaacacaa gtcataact gagtataagt ataatttcag 240

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

<220>  
 <221> source  
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"  
  
 <400> 305  
 cgtaatttat attgtgaatc acggacttaa ataattgagc cttaaagaag aaattcttta 60  
 agtggatgct ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc 120  
 caagccgaag tagtaattag taagttaaca atagatgact tacaactaat cggaaggtgc 180  
 agagactcga cgggagctac cctaacgtcc acaaacacaa gtcataact gagtataagt 240

ataatttcag 250

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

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

<400> 306  
gctatgatcc acggacttaa ataattgagc cttaaagaag aaattcttta agtggatgct 60  
ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc caagccgaag 120  
tagtaattag taagttaaca atagatgact tacaactaat 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 gctgcatcc 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 aaattccttta 60  
 agtggatgct ctcaaactca gggaaaccta aatctagtta tagacaaggc aatcctgagc 120  
 caagccgaag tagtaattag taagttaaca atagatgact tacaactaat cggaaggtgc 180  
 agagactcga cgggagctac cctaacgtcc acaaacacaa gtcataact gagtataagt 240  
 ataatttcag 250

<210> 309  
 <211> 1137  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 309  
 atgctgctgc tggtcacatc tctgctgctg tgcgagctgc cccatcctgc ctttctgctg 60  
 atccccgaca tccagatgac ccagaccaca agcagcctgt ctgccagcct gggcgataga 120  
 gtgaccatca gctgtagagc cagccaggac atcagcaagt acctgaactg gtatcagcaa 180  
 aagcccgcg gcaccgtgaa gctgctgac taccacacca gcagactgca cagcggcgtg 240  
 ccaagcagat tttctggcag cggctctggc accgactaca gcctgacaat cagcaacctg 300  
 gaacaagagg atatcgctac ctacttctgc cagcaaggca acaccctgcc ttacaccttt 360  
 ggcggaggca ccaagctgga aatcaccggc tctacaagcg gcagcggcaa acctggatct 420  
 ggcgagggat ctaccaaggg cgaagtgaac ctgcaagagt ctggccctgg actggtggcc 480  
 ccatctcagt ctctgagcgt gacctgtaca gtcagcggag tgtccctgcc tgattacggc 540  
 gtgtcctgga tcagacagcc tcctcgaaa ggcctggaat ggctgggagt gatctggggc 600  
 agcgagacaa cctactacaa cagcgccctg aagtcccggc tgaccatcat caaggacaac 660  
 tccaagagcc aggtgttcct gaagatgaac agcctgcaga ccgacgacac cgccatctac 720  
 tattgcgcca agcactacta ctacggcggc agctacgcca tggattattg gggccagggc 780  
 accagcgtga ccgtttcttc tgccgccgct atcgaagtga tgtaccctcc tccttacctg 840  
 gacaacgaga agtccaacgg caccatcatc cacgtgaagg gcaagcacct gtgtccttct 900

|                                                                   |      |
|-------------------------------------------------------------------|------|
| ccactgttcc ccggacctag caagcctttc tgggtgctcg ttgttggttg cggcgtgctg | 960  |
| gcctgttaca gcctgctggg taccgtggcc ttcacatctt tttgggtcaa gagaggccgg | 1020 |
| aagaaacttc tttatatatt caagcagccc tttatgcgac ccgttcagac tacccaagag | 1080 |
| gaagatggat gcagttgccg ctttccagaa gaggaggagg gcgggtgcga actgtaa    | 1137 |

<210> 310

<211> 1134

<212> DNA

<213> Artificial Sequence

<220>

<221> source

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

<400> 310

|                                                                   |      |
|-------------------------------------------------------------------|------|
| atgctgctgc tggcacatc tctgctgctg tgcgagctgc cccatcctgc ctttctgctg  | 60   |
| atccccgaca tccagatgac ccagaccaca agcagcctgt ctgccagcct gggcgataga | 120  |
| gtgaccatca gctgtagagc cagccaggac atcagcaagt acctgaactg gtatcagcaa | 180  |
| aagcccgcgc gcaccgtgaa gctgctgctg taccacacca gcagactgca cagcggcgtg | 240  |
| ccaagcagat tttctggcag cggctctggc accgactaca gcctgacaat cagcaacctg | 300  |
| gaacaagagg atatcgctac ctacttctgc cagcaaggca acaccctgcc ttacaccttt | 360  |
| ggcggaggca ccaagctgga aatcaccggc tctacaagcg gcagcggcaa acctggatct | 420  |
| ggcgagggat ctaccaaggg cgaagtgaat ctgcaagagt ctggccctgg actggtggcc | 480  |
| ccatctcagt ctctgagcgt gacctgtaca gtcagcggag tgtccctgcc tgattacggc | 540  |
| gtgtcctgga tcagacagcc tcctcggaat ggcctggaat ggctgggagt gatctggggc | 600  |
| agcgagacaa cctactacaa cagcgccctg aagtcccggc tgaccatcat caaggacaac | 660  |
| tccaagagcc aggtgttcct gaagatgaac agcctgcaga ccgacgacac cgccatctac | 720  |
| tattgcgcca agcactacta ctacggcggc agctacgcca tggattattg gggccagggc | 780  |
| accagcgtga ccgtttcttc tgccgccgct atcgaagtga tgtaccctcc tccttacctg | 840  |
| gacaacgaga agtccaacgg caccatcatc cacgtgaagg gcaagcacct gtgtccttct | 900  |
| ccactgttcc ccggacctag caagcctttc tgggtgctcg ttgttggttg cggcgtgctg | 960  |
| gcctgttaca gcctgctggg taccgtggcc ttcacatctt tttgggtccg aagcaagcgg | 1020 |

|                                                                  |      |
|------------------------------------------------------------------|------|
| agccggctgc tgcactccga ctacatgaac atgacccta gacggcccgg accaaccaga | 1080 |
| aagcactacc agccttacgc tcctcctaga gacttcgccg cctaccggtc ctaa      | 1134 |

<210> 311  
 <211> 1470  
 <212> DNA  
 <213> Artificial Sequence

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

|                                                                   |      |
|-------------------------------------------------------------------|------|
| <400> 311                                                         |      |
| atgctgctgc tggtcacatc tctgctgctg tgcgagctgc cccatcctgc ctttctgctg | 60   |
| atccccgaca tccagatgac ccagaccaca agcagcctgt ctgccagcct gggcgataga | 120  |
| gtgaccatca gctgtagagc cagccaggac atcagcaagt acctgaactg gtatcagcaa | 180  |
| aagcccgacg gcaccgtgaa gctgctgctg taccacacca gcagactgca cagcggcgtg | 240  |
| ccaagcagat tttctggcag cggctctggc accgactaca gcctgacaat cagcaacctg | 300  |
| gaacaagagg atatcgctac ctacttctgc cagcaaggca acaccctgcc ttacaccttt | 360  |
| ggcggaggca ccaagctgga aatcaccggc tctacaagcg gcagcggcaa acctggatct | 420  |
| ggcgagggat ctaccaaggg cgaagtgaac ctgcaagagt ctggccctgg actggtggcc | 480  |
| ccatctcagt ctctgagcgt gacctgtaca gtcagcggag tgtccctgcc tgattacggc | 540  |
| gtgtcctgga tcagacagcc tcctcggaac ggctgggagt gatctggggc            | 600  |
| agcgagacaa cctactacaa cagcgccctg aagtcccggc tgaccatcat caaggacaac | 660  |
| tccaagagcc aggtgttcct gaagatgaac agcctgcaga ccgacgacac cgccatctac | 720  |
| tattgcgcca agcactacta ctacggcggc agctacgcca tggattattg gggccagggc | 780  |
| accagcgtga ccgtttcttc tgccgccgct atcgaagtga tgtaccctcc tccttacctg | 840  |
| gacaacgaga agtccaacgg caccatcatc cacgtgaagg gcaagcacct gtgtccttct | 900  |
| ccactgttcc ccggacctag caagcctttc tgggtgctcg ttgttggtgg cggcgtgctg | 960  |
| gcctgttaca gcctgctggt taccgtggcc ttcatcatct tttgggtccg aagcaagcgg | 1020 |
| agccggctgc tgcactccga ctacatgaac atgacccta gacggcccgg accaaccaga  | 1080 |
| aagcactacc agccttacgc tcctcctaga gacttcgccg cctaccggtc cagagtgaag | 1140 |

|                                                                    |      |
|--------------------------------------------------------------------|------|
| ttcagcagat ccgccgatgc tccgcctat cagcagggcc aaaaccagct gtacaacgag   | 1200 |
| ctgaacctgg ggagaagaga agagtacgac gtgctggaca agcggagagg cagagatcct  | 1260 |
| gaaatgggcg gcaagcccag acggaagaat cctcaagagg gcctgtataa tgagctgcag  | 1320 |
| aaagacaaga tggccgaggc ctacagcgag atcggaatga agggcgagcg cagaagaggc  | 1380 |
| aagggacacg atggactgta ccagggactg agcaccgccca ccaaggatac ctatgacgcc | 1440 |
| ctgcacatgc aggccctgcc tccaagataa                                   | 1470 |

<210> 312

<211> 1347

<212> DNA

<213> Artificial Sequence

<220>

<221> source

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

<400> 312

|                                                                     |     |
|---------------------------------------------------------------------|-----|
| atgctgctgc tggtcacatc tctgctgctg tgcgagctgc cccatcctgc ctttctgctg   | 60  |
| atccccgaca tccagatgac ccagaccaca agcagcctgt ctgccagcct gggcgataga   | 120 |
| gtgaccatca gctgtagagc cagccaggac atcagcaagt acctgaactg gtatcagcaa   | 180 |
| aagccccgacg gcaccgtgaa gctgctgatac taccacacca gcagactgca cagcggcgtg | 240 |
| ccaagcagat tttctggcag cggctctggc accgactaca gcctgacaat cagcaacctg   | 300 |
| gaacaagagg atatcgctac ctacttctgc cagcaaggca acaccctgcc ttacaccttt   | 360 |
| ggcgggaggca ccaagctgga aatcaccggc tctacaagcg gcagcggcaa acctggatct  | 420 |
| ggcgagggat ctaccaaggg cgaagtgaac ctgcaagagt ctggccctgg actggtggcc   | 480 |
| ccatctcagt ctctgagcgt gacctgtaca gtcagcggag tgtccctgcc tgattacggc   | 540 |
| gtgtcctgga tcagacagcc tcctcgaaa ggcctggaat ggctgggagt gatctggggc    | 600 |
| agcgagacaa cctactacaa cagcgccctg aagtcccggc tgaccatcat caaggacaac   | 660 |
| tccaagagcc aggtgttcct gaagatgaac agcctgcaga ccgacgacac cgccatctac   | 720 |
| tattgcgcca agcactacta ctacggcggc agctacgcca tggattattg gggccagggc   | 780 |
| accagcgtga ccgtttcttc tgccgccgct atcgaagtga tgtaccctcc tccttacctg   | 840 |
| gacaacgaga agtccaacgg caccatcatc cacgtgaagg gcaagcacct gtgtccttct   | 900 |

|                                                                   |      |
|-------------------------------------------------------------------|------|
| ccactgttcc ccggacctag caagcctttc tgggtgctcg ttgttggttg cggcgtgctg | 960  |
| gcctgttaca gcctgctggt taccgtggcc ttcacatctt tttgggtcag agtgaagttc | 1020 |
| agcagatccg ccgatgctcc cgcctatcag cagggccaaa accagctgta caacgagctg | 1080 |
| aacctgggga gaagagaaga gtacgacgtg ctggacaagc ggagaggcag agatcctgaa | 1140 |
| atgggcggca agcccagacg gaagaatcct caagagggcc tgtataatga gctgcagaaa | 1200 |
| gacaagatgg ccgaggccta cagcgagatc ggaatgaagg gcgagcgagc aagaggcaag | 1260 |
| ggacacgatg gactgtacca gggactgagc accgccacca aggataccta tgacgccctg | 1320 |
| cacatgcagg ccctgcctcc aagataa                                     | 1347 |

<210> 313

<211> 1461

<212> DNA

<213> Artificial Sequence

<220>

<221> source

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

<400> 313

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| atggctctcc cggtcacagc ctttctcctg cccctggcac tcttgctgca tgcggcacga  | 60  |
| cccgacatcc agatgaccca gaccacaagc agcctgtctg ccagcctggg cgatagagtg  | 120 |
| accatcagct gtagagccag ccaggacatc agcaagtacc tgaactggta tcagcaaaag  | 180 |
| cccgacggca ccgtgaagct gctgatctac cacaccagca gactgcacag cggcgtgccca | 240 |
| agcagatttt ctggcagcgg ctctggcacc gactacagcc tgacaatcag caacctggaa  | 300 |
| caagaggata tcgctaccta cttctgccag caaggcaaca ccctgcctta cacctttggc  | 360 |
| ggaggcacca agctggaaat caccggtgga ggtgggttctg gcggaggggg atctggtgga | 420 |
| ggcggttcag aagtgaaact gcaagagtct ggccctggac tgggtggccc atctcagtct  | 480 |
| ctgagcgtga cctgtacagt cagcggagtg tccctgcctg attacggcgt gtcctggatc  | 540 |
| agacagcctc ctcggaaagg cctggaatgg ctgggagtga tctggggcag cgagacaacc  | 600 |
| tactacaaca gcgccctgaa gtcccggctg accatcatca aggacaactc caagagccag  | 660 |
| gtgttcctga agatgaacag cctgcagacc gacgacaccg ccatctacta ttgcgccaaag | 720 |
| cactactact acggcggcag ctacgcatg gattattggg gccagggcac cagcgtgacc   | 780 |

|                                                                   |      |
|-------------------------------------------------------------------|------|
| gtttcttcta ccacaacgcc cgccccgcga ccgcctactc ccgctccac aattgcatca  | 840  |
| caacccctgt ctttgagacc cgaagcttgt cgaccagctg ccggtggcgc ggttcacacg | 900  |
| cgggggctcg atttcgcctg tgatatatat atatgggccc cattggctgg aacatgcgga | 960  |
| gtattgcttc tgagcctggg gattaccctc tactgtaaga gaggccggaa gaaacttctt | 1020 |
| tatatattca agcagccctt tatgcgaccc gttcagacta cccaagagga agatggatgc | 1080 |
| agttgccgct ttccagaaga ggaggagggc ggggtgcgaac tgagagtga gttcagcaga | 1140 |
| tccgccgatg ctccgccta tcagcagggc caaaaccagc tgtacaacga gctgaacctg  | 1200 |
| gggagaagag aagagtacga cgtgctggac aagcggagag gcagagatcc tgaaatgggc | 1260 |
| ggcaagccca gacggaagaa tcctcaagag ggcctgtata atgagctgca gaaagacaag | 1320 |
| atggccgagg cctacagcga gatcggaatg aagggcgagc gcagaagagg caagggacac | 1380 |
| gatggactgt accagggact gagcaccgcc accaaggata cctatgacgc cctgcacatg | 1440 |
| caggccctgc ctccaagata a                                           | 1461 |

<210> 314

<211> 1461

<212> DNA

<213> Artificial Sequence

<220>

<221> source

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

<400> 314

|                                                                     |     |
|---------------------------------------------------------------------|-----|
| atggctctcc cggtcacagc ctttctcctg cccctggcac tcttgctgca tgcggcacga   | 60  |
| cccgacatcc agatgaccca gaccacaagc agcctgtctg ccagcctggg cgatagagtg   | 120 |
| accatcagct gtagagccag ccaggacatc agcaagtacc tgaactggta tcagcaaaag   | 180 |
| cccgacggca ccgtgaagct gctgatctac cacaccagca gactgcacag cggcgtgcca   | 240 |
| agcagatfff ctggcagcgg ctctggcacc gactacagcc tgacaatcag caacctggaa   | 300 |
| caagaggata tcgctaccta cttctgccag caaggcaaca ccctgcctta cacctttggc   | 360 |
| ggaggcacca agctggaaat caccgggtgga ggtgggttctg gcggaggggg atctgggtga | 420 |
| ggcggttcag aagtgaact gcaagagtct ggccctggac tggtggcccc atctcagtct    | 480 |
| ctgagcgtga cctgtacagt cagcggagtg tccctgcctg attacggcgt gtcctggatc   | 540 |

|                                                                   |      |
|-------------------------------------------------------------------|------|
| agacagcctc ctcggaaagg cctggaatgg ctgggagtga tctggggcag cgagacaacc | 600  |
| tactacaaca gcgccctgaa gtcccggctg accatcatca aggacaactc caagagccag | 660  |
| gtgttcctga agatgaacag cctgcagacc gacgacaccg ccatctacta ttgcgccaag | 720  |
| cactactact acggcggcag ctacgccatg gattattggg gccagggcac cagcgtgacc | 780  |
| gtttcttcta ccacaacgcc cgccccgcga ccgcctactc ccgctccac aattgcatca  | 840  |
| caacccctgt ctttgagacc cgaagcttgt cgaccagctg ccggtggcgc ggttcacacg | 900  |
| cgggggctcg atttcgcctg tgatatatat atatgggccc cattggctgg aacatgcgga | 960  |
| gtattgcttc tgagcctggt gattaccctc tactgtaaga gaggccgga gaaacttctt  | 1020 |
| tatatattca agcagccctt tatgcgacct gttcagacta cccaagagga agatggatgc | 1080 |
| agttgccgct ttccagaaga ggaggagggc ggggtgcgaac tgagagtga gttcagcaga | 1140 |
| tccgccgatg ctccgccta taagcagggc caaaaccagc tgtacaacga gctgaacctg  | 1200 |
| gggagaagag aagagtacga cgtgctggac aagcggagag gcagagatcc tgaaatgggc | 1260 |
| ggcaagccca gacggaagaa tcctcaagag ggcctgtata atgagctgca gaaagacaag | 1320 |
| atggccgagg cctacagcga gatcggaatg aagggcgagc gcagaagagg caagggacac | 1380 |
| gatggactgt accagggact gagcaccgcc accaaggata cctatgacgc cctgcacatg | 1440 |
| caggccctgc ctccaagata a                                           | 1461 |

<210> 315

<211> 1452

<212> DNA

<213> Artificial Sequence

<220>

<221> source

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

<400> 315

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| atgctgctgc tggtcacatc tctgctgctg tgcgagctgc cccatcctgc ctttctgctg | 60  |
| atcccccagg ttcaactcca gcagtctggt cccggcctcg ttaaaccaag ccagactttg | 120 |
| tctcttacct gtgctatcag tggcgatagc gtgtctagta attcagccgc atggaactgg | 180 |
| atccgacaat caccgagtag gggacttgaa tggctgggta gaacctatta ccggtccaaa | 240 |
| tggtagaatg actatgcagt gtctgtaaaa agcaggatca cgatcaacct tgatacgtct | 300 |

|                                                                    |      |
|--------------------------------------------------------------------|------|
| aaaaaccagt tttctctgca acttaatagt gtgaccctg aagacaccgc tgtgtattac   | 360  |
| tgtgcacggg aggttaccgg tgatcttgaa gatgcttttg atatatgggg ccaaggtacg  | 420  |
| atggtcacgg tgtctagtgg gggaggcggc agcgacatac agatgacgca gagcccatcc  | 480  |
| agtctctccg cgtctgttgg tgacagagtg actattacat gtagggcgtc tcagaccatt  | 540  |
| tggtcttacc tcaattggta tcaacagcga ccaggcaaag caccgaactt gctcatttac  | 600  |
| gctgccagct cactccaaag tgggtgtgccg tccagattta gtggtagggg cagtggcact | 660  |
| gatttcactc tgactatttc aagtcttcaa gctgaggatt ttgccacata ctactgccag  | 720  |
| caaagttact caatacctca gacttttggg caggggacaa aattggagat taaatccgga  | 780  |
| accacaacgc ccgccccg cgaccctact cccgctccca caattgcatc acaaccctg     | 840  |
| tctttgagac ccgaagcttg tcgaccagct gccggtggcg cggttcacac gcgggggctc  | 900  |
| gatttcgcct gtgatata tataatgggcc ccattggctg gaacatgcgg agtattgctt   | 960  |
| ctgagcctgg tgattaccct ctactgtaag agaggccgga agaaacttct ttatatattc  | 1020 |
| aagcagccct ttatgcgacc cgttcagact acccaagagg aagatggatg cagttgccgc  | 1080 |
| tttccagaag aggaggaggg cgggtgcgaa ctgagagtga agttcagcag atccgccgat  | 1140 |
| gctccgcct ataagcaggg ccaaaaccag ctgtacaacg agctgaacct ggggagaaga   | 1200 |
| gaagagtacg acgtgctgga caagcggaga ggcagagatc ctgaaatggg cggcaagccc  | 1260 |
| agacggaaga atcctcaaga gggcctgtat aatgagctgc agaaagacaa gatggccgag  | 1320 |
| gcctacagcg agatcggaat gaaggcgag cgcagaagag gcaagggaca cgatggactg   | 1380 |
| taccagggac tgagcaccgc caccaaggat acctatgacg ccctgcacat gcaggccctg  | 1440 |
| cctccaagat aa                                                      | 1452 |

<210> 316

<211> 2202

<212> DNA

<213> Artificial Sequence

<220>

<221> source

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

<400> 316

|                                                                   |    |
|-------------------------------------------------------------------|----|
| atgctgctgc tggtcacatc tctgctgctg tgcgagctgc cccatcctgc ctttctgctg | 60 |
|-------------------------------------------------------------------|----|

|                                                                    |      |
|--------------------------------------------------------------------|------|
| atccccgaca tccagatgac ccagaccaca agcagcctgt ctgccagcct gggcgataga  | 120  |
| gtgaccatca gctgtagagc cagccaggac atcagcaagt acctgaactg gtatcagcaa  | 180  |
| aagccccgacg gcaccgtgaa gctgctgatc taccacacca gcagactgca cagcggcgtg | 240  |
| ccaagcagat tttctggcag cggctctggc accgactaca gcctgacaat cagcaacctg  | 300  |
| gaacaagagg atatcgctac ctactttctgc cagcaaggca acaccctgcc ttacaccttt | 360  |
| ggcggaggca ccaagctgga aatcaccggc ggcggaggat cccaggttca actccagcag  | 420  |
| tctgggtccc gcctcgtaa accaagccag actttgtctc ttacctgtgc tatcagtggc   | 480  |
| gatagcgtgt ctagtaattc agccgcatgg aactggatcc gacaatcacc gagtagggga  | 540  |
| cttgaatggc tgggtagaac ctattaccgg tccaaatggt acaatgacta tgcagtgtct  | 600  |
| gtaaaaagca ggatcacgat caaccctgat acgtctaaaa accagttttc tctgcaactt  | 660  |
| aatagtgtga cccctgaaga caccgctgtg tattactgtg cacgggaggt taccggtgat  | 720  |
| cttgaagatg cttttgatat atggggccaa ggtacgatgg tcacggtgtc tagtggctct  | 780  |
| acaagcggca gcggcaaacc tggatctggc gagggatcta ccaagggcga catacagatg  | 840  |
| acgcagagcc catccagtct ctccgctct gttggtgaca gagtgactat tacatgtagg   | 900  |
| gcgtctcaga ccatttggtc ttacctcaat tggtatcaac agcgaccagg caaagcaccg  | 960  |
| aacttgctca tttacgctgc cagctcactc caaagtgggtg tgccgtccag atttagtggt | 1020 |
| aggggcagtg gcactgattt cactctgact atttcaagtc ttcaagctga ggattttgcc  | 1080 |
| acatactact gccagcaaag ttactcaata cctcagactt ttggacaggg gacaaaattg  | 1140 |
| gagattaaag ggggaggcgg cagcgaagtg aaactgcaag agtctggccc tggactggtg  | 1200 |
| gccccatctc agtctctgag cgtgacctgt acagtcagcg gagtgtccct gcctgattac  | 1260 |
| ggcgtgtcct ggatcagaca gcctcctcgg aaaggcctgg aatggctggg agtgatctgg  | 1320 |
| ggcagcgaga caacctacta caacagcgcc ctgaagtccc ggctgaccat catcaaggac  | 1380 |
| aactccaaga gccagggtgtt cctgaagatg aacagcctgc agaccgacga caccgccatc | 1440 |
| tactattgcg ccaagcacta ctactacggc ggcagctacg ccatggatta ttggggccag  | 1500 |
| ggcaccagcg tgaccgtttc ttcttcgga accacaacgc ccgccccgcg accgcctact   | 1560 |
| cccgctcca caattgcatc acaaccctg tctttgagac ccgaagcttg tcgaccagct    | 1620 |
| gccggtggcg cggttcacac gcgggggctc gatttcgcct gtgatatata tatatgggcc  | 1680 |

|                                                                   |      |
|-------------------------------------------------------------------|------|
| ccattggctg gaacatgcgg agtattgctt ctgagcctgg tgattaccct ctactgtaag | 1740 |
| agaggccgga agaaacttct ttatatattc aagcagccct ttatgcgacc cgttcagact | 1800 |
| acccaagagg aagatggatg cagttgccgc tttccagaag aggaggaggg cgggtgcgaa | 1860 |
| ctgagagtga agttcagcag atccgccgat gctcccgctt ataagcaggg ccaaaaccag | 1920 |
| ctgtacaacg agctgaacct ggggagaaga gaagagtacg acgtgctgga caagcggaga | 1980 |
| ggcagagatc ctgaaatggg cggcaagccc agacggaaga atcctcaaga gggcctgtat | 2040 |
| aatgagctgc agaaagacaa gatggccgag gcctacagcg agatcggaat gaaggcgag  | 2100 |
| cgcagaagag gcaagggaca cgatggactg taccagggac tgagcaccgc caccaaggat | 2160 |
| acctatgacg ccctgcacat gcaggccctg cctccaagat aa                    | 2202 |

<210> 317

<211> 2262

<212> DNA

<213> Artificial Sequence

<220>

<221> source

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

<400> 317

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| atgctgctgc tggtcacatc tctgctgctg tgcgagctgc cccatcctgc ctttctgctg  | 60  |
| atcccccagg ttcaactcca gcagtctggg cccggcctcg ttaaaccaag ccagactttg  | 120 |
| tctcttacct gtgctatcag tggcgatagc gtgtctagta attcagccgc atggaactgg  | 180 |
| atccgacaat caccgagtag gggacttgaa tggctgggta gaacctatta ccgggtccaaa | 240 |
| tgggtacaatg actatgcagt gtctgtaaaa agcaggatca cgatcaaccc tgatacgtct | 300 |
| aaaaaccagt tttctctgca acttaatagt gtgaccctg aagacaccgc tgtgtattac   | 360 |
| tgtgcacggg aggttaccgg tgatcttgaa gatgcttttg atatatgggg ccaaggtacg  | 420 |
| atggtcacgg tgtctagtgg gggaggcggc agcgacatac agatgacgca gagcccatcc  | 480 |
| agtctctccg cgtctgttgg tgacagagtg actattacat gtagggcgtc tcagaccatt  | 540 |
| tgggtcttacc tcaattggta tcaacagcga ccaggcaaag caccgaactt gctcatttac | 600 |
| gctgccagct cactccaaag tgggtgtgccg tccagattta gtggtagggg cagtggcact | 660 |
| gatttcactc tgactatttc aagtcttcaa gctgaggatt ttgccacata ctactgccag  | 720 |

|                                                                     |      |
|---------------------------------------------------------------------|------|
| caaagttact caatacctca gactttttgga caggggacaa aattggagat taaaggggga  | 780  |
| ggcggatccg gcggtggtgg ctccggcggt ggtggttctg gaggcggcgg aagcgggtggg  | 840  |
| ggtggtagcg acatccagat gaccagacc acaagcagcc tgtctgccag cctgggcgat    | 900  |
| agagtgacca tcagctgtag agccagccag gacatcagca agtacctgaa ctggtatcag   | 960  |
| caaaagcccc acggcaccgt gaagctgctg atctaccaca ccagcagact gcacagcggc   | 1020 |
| gtgccaagca gattttctgg cagcggctct ggcaccgact acagcctgac aatcagcaac   | 1080 |
| ctggaacaag aggatatcgc tacctacttc tgccagcaag gcaacaccct gccttacacc   | 1140 |
| tttggcggag gcaccaagct ggaaatcacc ggctctacaa gcggcagcgg caaacctgga   | 1200 |
| tctggcgagg gatctacaa gggcgaagtg aaactgcaag agtctggccc tggactggtg    | 1260 |
| gccccatctc agtctctgag cgtgacctgt acagtcagcg gagtgtccct gcctgattac   | 1320 |
| ggcgtgtcct ggatcagaca gcctcctcgg aaaggcctgg aatggctggg agtgatctgg   | 1380 |
| ggcagcgaga caacctacta caacagcgcc ctgaagtccc ggctgaccat catcaaggac   | 1440 |
| aactccaaga gccagggtgtt cctgaagatg aacagcctgc agaccgacga caccgccatc  | 1500 |
| tactattgcg ccaagcacta ctactacggc ggcagctacg ccatggatta ttggggccag   | 1560 |
| ggcaccagcg tgaccgtttc ttcttcgga accacaacgc ccgccccgcg accgcctact    | 1620 |
| cccgctccca caattgcatc acaaccctg tctttgagac ccgaagcttg tcgaccagct    | 1680 |
| gccgggtggcg cggttcacac gcgggggctc gatttcgcct gtgatataata tatatgggcc | 1740 |
| ccattggctg gaacatgcgg agtattgctt ctgagcctgg tgattaccct ctactgtaag   | 1800 |
| agaggccgga agaaacttct ttatatattc aagcagccct ttatgcgacc cgttcagact   | 1860 |
| acccaagagg aagatggatg cagttgccgc tttccagaag aggaggaggg cgggtgcgaa   | 1920 |
| ctgagagtga agttcagcag atccgccgat gctccgcct ataagcaggg ccaaaaccag    | 1980 |
| ctgtacaacg agctgaacct ggggagaaga gaagagtacg acgtgctgga caagcggaga   | 2040 |
| ggcagagatc ctgaaatggg cggcaagccc agacggaaga atcctcaaga gggcctgtat   | 2100 |
| aatgagctgc agaaagacaa gatggccgag gcctacagcg agatcggaat gaagggcgag   | 2160 |
| cgcagaagag gcaagggaca cgatggactg taccagggac tgagcaccgc caccaaggat   | 2220 |
| acctatgacg ccctgcacat gcaggccctg cctccaagat aa                      | 2262 |

<211> 42  
<212> PRT  
<213> Artificial Sequence

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

<400> 318  
Lys Arg Gly Arg Lys Lys Leu Leu Tyr Ile Phe Lys Gln Pro Phe Met  
1 5 10 15

Arg Pro Val Gln Thr Thr Gln Glu Glu Asp Gly Cys Ser Cys Arg Phe  
20 25 30

Pro Glu Glu Glu Glu Gly Gly Cys Glu Leu  
35 40

<210> 319  
<211> 112  
<212> PRT  
<213> Artificial Sequence

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

<400> 319  
Arg Val Lys Phe Ser Arg Ser Ala Asp Ala Pro Ala Tyr Lys Gln Gly  
1 5 10 15

Gln Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu Glu Tyr  
20 25 30

Asp Val Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu Met Gly Gly Lys  
35 40 45

Pro Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu Gln Lys  
50 55 60

Asp Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly Glu Arg  
65 70 75 80

Arg Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly Leu Ser Thr Ala

85

90

95

Thr Lys Asp Thr Tyr Asp Ala Leu His Met Gln Ala Leu Pro Pro Arg  
 100 105 110

&lt;210&gt; 320

&lt;211&gt; 241

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;221&gt; source

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

&lt;400&gt; 320

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Glu Lys Pro Gly Ala  
 1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr  
 20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met  
 35 40 45

Gly Trp Ile Asn Pro Asn Ser Gly Gly Thr Asn Tyr Ala Gln Lys Phe  
 50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ile Ser Thr Ala Tyr  
 65 70 75 80

Met Glu Leu Ser Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95

Ala Ser Gly Trp Asp Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr  
 100 105 110

Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly  
 115 120 125

Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro Ser  
 130 135 140

Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala  
145 150 155 160

Ser Gln Ser Ile Arg Tyr Tyr Leu Ser Trp Tyr Gln Gln Lys Pro Gly  
165 170 175

Lys Ala Pro Lys Leu Leu Ile Tyr Thr Ala Ser Ile Leu Gln Asn Gly  
180 185 190

Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu  
195 200 205

Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Leu  
210 215 220

Gln Thr Tyr Thr Thr Pro Asp Phe Gly Pro Gly Thr Lys Val Glu Ile  
225 230 235 240

Lys

<210> 321  
<211> 120  
<212> PRT  
<213> Artificial Sequence

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

<400> 321  
Glu Val Lys Leu Gln Glu Ser Gly Pro Gly Leu Val Ala Pro Ser Gln  
1 5 10 15

Ser Leu Ser Val Thr Cys Thr Val Ser Gly Val Ser Leu Pro Asp Tyr  
20 25 30

Gly Val Ser Trp Ile Arg Gln Pro Pro Arg Lys Gly Leu Glu Trp Leu  
35 40 45

Gly Val Ile Trp Gly Ser Glu Thr Thr Tyr Tyr Asn Ser Ala Leu Lys  
50 55 60

Ser Arg Leu Thr Ile Ile Lys Asp Asn Ser Lys Ser Gln Val Phe Leu  
65 70 75 80

Lys Met Asn Ser Leu Gln Thr Asp Asp Thr Ala Ile Tyr Tyr Cys Ala  
85 90 95

Lys His Tyr Tyr Tyr Gly Gly Ser Tyr Ala Met Asp Tyr Trp Gly Gln  
100 105 110

Gly Thr Ser Val Thr Val Ser Ser  
115 120

<210> 322

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<221> source

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

<400> 322

Asp Ile Gln Met Thr Gln Thr Thr Ser Ser Leu Ser Ala Ser Leu Gly  
1 5 10 15

Asp Arg Val Thr Ile Ser Cys Arg Ala Ser Gln Asp Ile Ser Lys Tyr  
20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Asp Gly Thr Val Lys Leu Leu Ile  
35 40 45

Tyr His Thr Ser Arg Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly  
50 55 60

Ser Gly Ser Gly Thr Asp Tyr Ser Leu Thr Ile Ser Asn Leu Glu Gln  
65 70 75 80

Glu Asp Ile Ala Thr Tyr Phe Cys Gln Gln Gly Asn Thr Leu Pro Tyr  
85 90 95

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Thr  
100 105

<210> 323  
<211> 493  
<212> PRT  
<213> Artificial Sequence

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

<400> 323  
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu  
1 5 10 15

His Ala Ala Arg Pro Asp Ile Val Leu Thr Gln Ser Pro Ala Ser Leu  
20 25 30

Ala Val Ser Leu Gly Glu Arg Ala Thr Ile Asn Cys Arg Ala Ser Glu  
35 40 45

Ser Val Ser Val Ile Gly Ala His Leu Ile His Trp Tyr Gln Gln Lys  
50 55 60

Pro Gly Gln Pro Pro Lys Leu Leu Ile Tyr Leu Ala Ser Asn Leu Glu  
65 70 75 80

Thr Gly Val Pro Ala Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe  
85 90 95

Thr Leu Thr Ile Ser Ser Leu Gln Ala Glu Asp Ala Ala Ile Tyr Tyr  
100 105 110

Cys Leu Gln Ser Arg Ile Phe Pro Arg Thr Phe Gly Gln Gly Thr Lys  
115 120 125

Leu Glu Ile Lys Gly Ser Thr Ser Gly Ser Gly Lys Pro Gly Ser Gly  
130 135 140

Glu Gly Ser Thr Lys Gly Gln Val Gln Leu Val Gln Ser Gly Ser Glu  
145 150 155 160

Leu Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly

165

170

175

Tyr Thr Phe Thr Asp Tyr Ser Ile Asn Trp Val Arg Gln Ala Pro Gly  
 180 185 190

Gln Gly Leu Glu Trp Met Gly Trp Ile Asn Thr Glu Thr Arg Glu Pro  
 195 200 205

Ala Tyr Ala Tyr Asp Phe Arg Gly Arg Phe Val Phe Ser Leu Asp Thr  
 210 215 220

Ser Val Ser Thr Ala Tyr Leu Gln Ile Ser Ser Leu Lys Ala Glu Asp  
 225 230 235 240

Thr Ala Val Tyr Tyr Cys Ala Arg Asp Tyr Ser Tyr Ala Met Asp Tyr  
 245 250 255

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ala Ala Thr Thr  
 260 265 270

Thr Pro Ala Pro Arg Pro Pro Thr Pro Ala Pro Thr Ile Ala Ser Gln  
 275 280 285

Pro Leu Ser Leu Arg Pro Glu Ala Cys Arg Pro Ala Ala Gly Gly Ala  
 290 295 300

Val His Thr Arg Gly Leu Asp Phe Ala Cys Asp Ile Tyr Ile Trp Ala  
 305 310 315 320

Pro Leu Ala Gly Thr Cys Gly Val Leu Leu Leu Ser Leu Val Ile Thr  
 325 330 335

Leu Tyr Cys Lys Arg Gly Arg Lys Lys Leu Leu Tyr Ile Phe Lys Gln  
 340 345 350

Pro Phe Met Arg Pro Val Gln Thr Thr Gln Glu Glu Asp Gly Cys Ser  
 355 360 365

Cys Arg Phe Pro Glu Glu Glu Gly Gly Cys Glu Leu Arg Val Lys  
 370 375 380

Phe Ser Arg Ser Ala Asp Ala Pro Ala Tyr Gln Gln Gly Gln Asn Gln  
385 390 395 400

Leu Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu Glu Tyr Asp Val Leu  
405 410 415

Asp Lys Arg Arg Gly Arg Asp Pro Glu Met Gly Gly Lys Pro Arg Arg  
420 425 430

Lys Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu Gln Lys Asp Lys Met  
435 440 445

Ala Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly Glu Arg Arg Arg Gly  
450 455 460

Lys Gly His Asp Gly Leu Tyr Gln Gly Leu Ser Thr Ala Thr Lys Asp  
465 470 475 480

Thr Tyr Asp Ala Leu His Met Gln Ala Leu Pro Pro Arg  
485 490

<210> 324

<211> 207

<212> PRT

<213> Artificial Sequence

<220>

<221> source

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

<400> 324

Lys Asn Gln Val Glu Gln Ser Pro Gln Ser Leu Ile Ile Leu Glu Gly  
1 5 10 15

Lys Asn Cys Thr Leu Gln Cys Asn Tyr Thr Val Ser Pro Phe Ser Asn  
20 25 30

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

Ile Met Thr Phe Ser Glu Asn Thr Lys Ser Asn Gly Arg Tyr Thr Ala  
50 55 60

Thr Leu Asp Ala Asp Thr Lys Gln Ser Ser Leu His Ile Thr Ala Ser  
65 70 75 80

Gln Leu Ser Asp Ser Ala Ser Tyr Ile Cys Val Val Asn His Ser Gly  
85 90 95

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

Pro Tyr Ile Gln Lys Pro Asp Pro Ala Val Tyr Gln Leu Arg Asp Ser  
115 120 125

Lys Ser Ser Asp Lys Ser Val Cys Leu Phe Thr Asp Phe Asp Ser Gln  
130 135 140

Thr Asn Val Ser Gln Ser Lys Asp Ser Asp Val Tyr Ile Thr Asp Lys  
145 150 155 160

Thr Val Leu Asp Met Arg Ser Met Asp Phe Lys Ser Asn Ser Ala Val  
165 170 175

Ala Trp Ser Asn Lys Ser Asp Phe Ala Cys Ala Asn Ala Phe Asn Asn  
180 185 190

Ser Ile Ile Pro Glu Asp Thr Phe Phe Pro Ser Pro Glu Ser Ser  
195 200 205

<210> 325

<211> 246

<212> PRT

<213> Artificial Sequence

<220>

<221> source

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

<400> 325

Asp Val Lys Val Thr Gln Ser Ser Arg Tyr Leu Val Lys Arg Thr Gly  
1 5 10 15

Glu Lys Val Phe Leu Glu Cys Val Gln Asp Met Asp His Glu Asn Met

20

25

30

Phe Trp Tyr Arg Gln Asp Pro Gly Leu Gly Leu Arg Leu Ile Tyr Phe  
 35 40 45

Ser Tyr Asp Val Lys Met Lys Glu Lys Gly Asp Ile Pro Glu Gly Tyr  
 50 55 60

Ser Val Ser Arg Glu Lys Lys Glu Arg Phe Ser Leu Ile Leu Glu Ser  
 65 70 75 80

Ala Ser Thr Asn Gln Thr Ser Met Tyr Leu Cys Ala Ser Ser Phe Leu  
 85 90 95

Met Thr Ser Gly Asp Pro Tyr Glu Gln Tyr Phe Gly Pro Gly Thr Arg  
 100 105 110

Leu Thr Val Thr Glu Asp Leu Lys Asn Val Phe Pro Pro Glu Val Ala  
 115 120 125

Val Phe Glu Pro Ser Glu Ala Glu Ile Ser His Thr Gln Lys Ala Thr  
 130 135 140

Leu Val Cys Leu Ala Thr Gly Phe Tyr Pro Asp His Val Glu Leu Ser  
 145 150 155 160

Trp Trp Val Asn Gly Lys Glu Val His Ser Gly Val Ser Thr Asp Pro  
 165 170 175

Gln Pro Leu Lys Glu Gln Pro Ala Leu Asn Asp Ser Arg Tyr Cys Leu  
 180 185 190

Ser Ser Arg Leu Arg Val Ser Ala Thr Phe Trp Gln Asn Pro Arg Asn  
 195 200 205

His Phe Arg Cys Gln Val Gln Phe Tyr Gly Leu Ser Glu Asn Asp Glu  
 210 215 220

Trp Thr Gln Asp Arg Ala Lys Pro Val Thr Gln Ile Val Ser Ala Glu  
 225 230 235 240

Ala Trp Gly Arg Ala Asp  
245

<210> 326

<211> 115

<212> PRT

<213> Artificial Sequence

<220>

<221> source

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

<400> 326

Met Gln Glu Val Thr Gln Ile Pro Ala Ala Leu Ser Val Pro Glu Gly  
1 5 10 15

Glu Asn Leu Val Leu Asn Cys Ser Phe Thr Asp Ser Ala Ile Tyr Asn  
20 25 30

Leu Gln Trp Phe Arg Gln Asp Pro Gly Lys Gly Leu Thr Ser Leu Leu  
35 40 45

Leu Ile Gln Ser Ser Gln Arg Glu Gln Thr Ser Gly Arg Leu Asn Ala  
50 55 60

Ser Leu Asp Lys Ser Ser Gly Arg Ser Thr Leu Tyr Ile Ala Ala Ser  
65 70 75 80

Gln Pro Gly Asp Ser Ala Thr Tyr Leu Cys Ala Val Arg Pro Thr Ser  
85 90 95

Gly Gly Ser Tyr Ile Pro Thr Phe Gly Arg Gly Thr Ser Leu Ile Val  
100 105 110

His Pro Tyr  
115

<210> 327

<211> 112

<212> PRT

<213> Artificial Sequence

<220>

<221> source

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

<400> 327

Met Gly Val Thr Gln Thr Pro Lys Phe Gln Val Leu Lys Thr Gly Gln  
1 5 10 15

Ser Met Thr Leu Gln Cys Ala Gln Asp Met Asn His Glu Tyr Met Ser  
20 25 30

Trp Tyr Arg Gln Asp Pro Gly Met Gly Leu Arg Leu Ile His Tyr Ser  
35 40 45

Val Gly Ala Gly Ile Thr Asp Gln Gly Glu Val Pro Asn Gly Tyr Asn  
50 55 60

Val Ser Arg Ser Thr Thr Glu Asp Phe Pro Leu Arg Leu Leu Ser Ala  
65 70 75 80

Ala Pro Ser Gln Thr Ser Val Tyr Phe Cys Ala Ser Ser Tyr Val Gly  
85 90 95

Asn Thr Gly Glu Leu Phe Phe Gly Glu Gly Ser Arg Leu Thr Val Leu  
100 105 110

<210> 328

<211> 166

<212> PRT

<213> Artificial Sequence

<220>

<221> source

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

<400> 328

Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu  
1 5 10 15

Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His  
20 25 30

Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe  
35 40 45

Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp  
50 55 60

Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu  
65 70 75 80

Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp  
85 90 95

Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu  
100 105 110

Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala  
115 120 125

Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val  
130 135 140

Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala  
145 150 155 160

Cys Arg Thr Gly Asp Arg  
165

<210> 329

<211> 452

<212> PRT

<213> Artificial Sequence

<220>

<221> source

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

<400> 329

Met Ser Thr Ala Val Leu Glu Asn Pro Gly Leu Gly Arg Lys Leu Ser  
1 5 10 15

Asp Phe Gly Gln Glu Thr Ser Tyr Ile Glu Asp Asn Cys Asn Gln Asn  
20 25 30

Gly Ala Ile Ser Leu Ile Phe Ser Leu Lys Glu Glu Val Gly Ala Leu

35

40

45

Ala Lys Val Leu Arg Leu Phe Glu Glu Asn Asp Val Asn Leu Thr His  
 50 55 60

Ile Glu Ser Arg Pro Ser Arg Leu Lys Lys Asp Glu Tyr Glu Phe Phe  
 65 70 75 80

Thr His Leu Asp Lys Arg Ser Leu Pro Ala Leu Thr Asn Ile Ile Lys  
 85 90 95

Ile Leu Arg His Asp Ile Gly Ala Thr Val His Glu Leu Ser Arg Asp  
 100 105 110

Lys Lys Lys Asp Thr Val Pro Trp Phe Pro Arg Thr Ile Gln Glu Leu  
 115 120 125

Asp Arg Phe Ala Asn Gln Ile Leu Ser Tyr Gly Ala Glu Leu Asp Ala  
 130 135 140

Asp His Pro Gly Phe Lys Asp Pro Val Tyr Arg Ala Arg Arg Lys Gln  
 145 150 155 160

Phe Ala Asp Ile Ala Tyr Asn Tyr Arg His Gly Gln Pro Ile Pro Arg  
 165 170 175

Val Glu Tyr Met Glu Glu Glu Lys Lys Thr Trp Gly Thr Val Phe Lys  
 180 185 190

Thr Leu Lys Ser Leu Tyr Lys Thr His Ala Cys Tyr Glu Tyr Asn His  
 195 200 205

Ile Phe Pro Leu Leu Glu Lys Tyr Cys Gly Phe His Glu Asp Asn Ile  
 210 215 220

Pro Gln Leu Glu Asp Val Ser Gln Phe Leu Gln Thr Cys Thr Gly Phe  
 225 230 235 240

Arg Leu Arg Pro Val Ala Gly Leu Leu Ser Ser Arg Asp Phe Leu Gly  
 245 250 255

Gly Leu Ala Phe Arg Val Phe His Cys Thr Gln Tyr Ile Arg His Gly  
260 265 270

Ser Lys Pro Met Tyr Thr Pro Glu Pro Asp Ile Cys His Glu Leu Leu  
275 280 285

Gly His Val Pro Leu Phe Ser Asp Arg Ser Phe Ala Gln Phe Ser Gln  
290 295 300

Glu Ile Gly Leu Ala Ser Leu Gly Ala Pro Asp Glu Tyr Ile Glu Lys  
305 310 315 320

Leu Ala Thr Ile Tyr Trp Phe Thr Val Glu Phe Gly Leu Cys Lys Gln  
325 330 335

Gly Asp Ser Ile Lys Ala Tyr Gly Ala Gly Leu Leu Ser Ser Phe Gly  
340 345 350

Glu Leu Gln Tyr Cys Leu Ser Glu Lys Pro Lys Leu Leu Pro Leu Glu  
355 360 365

Leu Glu Lys Thr Ala Ile Gln Asn Tyr Thr Val Thr Glu Phe Gln Pro  
370 375 380

Leu Tyr Tyr Val Ala Glu Ser Phe Asn Asp Ala Lys Glu Lys Val Arg  
385 390 395 400

Asn Phe Ala Ala Thr Ile Pro Arg Pro Phe Ser Val Arg Tyr Asp Pro  
405 410 415

Tyr Thr Gln Arg Ile Glu Val Leu Asp Asn Thr Gln Gln Leu Lys Ile  
420 425 430

Leu Ala Asp Ser Ile Asn Ser Glu Ile Gly Ile Leu Cys Ser Ala Leu  
435 440 445

Gln Lys Ile Lys  
450

<210> 330

<211> 1462  
<212> PRT  
<213> Artificial Sequence

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

<400> 330  
Leu Ser Val Lys Ala Gln Thr Ala His Ile Val Leu Glu Asp Gly Thr  
1 5 10 15

Lys Met Lys Gly Tyr Ser Phe Gly His Pro Ser Ser Val Ala Gly Glu  
20 25 30

Val Val Phe Asn Thr Gly Leu Gly Gly Tyr Pro Glu Ala Ile Thr Asp  
35 40 45

Pro Ala Tyr Lys Gly Gln Ile Leu Thr Met Ala Asn Pro Ile Ile Gly  
50 55 60

Asn Gly Gly Ala Pro Asp Thr Thr Ala Leu Asp Glu Leu Gly Leu Ser  
65 70 75 80

Lys Tyr Leu Glu Ser Asn Gly Ile Lys Val Ser Gly Leu Leu Val Leu  
85 90 95

Asp Tyr Ser Lys Asp Tyr Asn His Trp Leu Ala Thr Lys Ser Leu Gly  
100 105 110

Gln Trp Leu Gln Glu Glu Lys Val Pro Ala Ile Tyr Gly Val Asp Thr  
115 120 125

Arg Met Leu Thr Lys Ile Ile Arg Asp Lys Gly Thr Met Leu Gly Lys  
130 135 140

Ile Glu Phe Glu Gly Gln Pro Val Asp Phe Val Asp Pro Asn Lys Gln  
145 150 155 160

Asn Leu Ile Ala Glu Val Ser Thr Lys Asp Val Lys Val Tyr Gly Lys  
165 170 175

Gly Asn Pro Thr Lys Val Val Ala Val Asp Cys Gly Ile Lys Asn Asn  
180 185 190

Val Ile Arg Leu Leu Val Lys Arg Gly Ala Glu Val His Leu Val Pro  
195 200 205

Trp Asn His Asp Phe Thr Lys Met Glu Tyr Asp Gly Ile Leu Ile Ala  
210 215 220

Gly Gly Pro Gly Asn Pro Ala Leu Ala Glu Pro Leu Ile Gln Asn Val  
225 230 235 240

Arg Lys Ile Leu Glu Ser Asp Arg Lys Glu Pro Leu Phe Gly Ile Ser  
245 250 255

Thr Gly Asn Leu Ile Thr Gly Leu Ala Ala Gly Ala Lys Thr Tyr Lys  
260 265 270

Met Ser Met Ala Asn Arg Gly Gln Asn Gln Pro Val Leu Asn Ile Thr  
275 280 285

Asn Lys Gln Ala Phe Ile Thr Ala Gln Asn His Gly Tyr Ala Leu Asp  
290 295 300

Asn Thr Leu Pro Ala Gly Trp Lys Pro Leu Phe Val Asn Val Asn Asp  
305 310 315 320

Gln Thr Asn Glu Gly Ile Met His Glu Ser Lys Pro Phe Phe Ala Val  
325 330 335

Gln Phe His Pro Glu Val Thr Pro Gly Pro Ile Asp Thr Glu Tyr Leu  
340 345 350

Phe Asp Ser Phe Phe Ser Leu Ile Lys Lys Gly Lys Ala Thr Thr Ile  
355 360 365

Thr Ser Val Leu Pro Lys Pro Ala Leu Val Ala Ser Arg Val Glu Val  
370 375 380

Ser Lys Val Leu Ile Leu Gly Ser Gly Gly Leu Ser Ile Gly Gln Ala  
385 390 395 400

Gly Glu Phe Asp Tyr Ser Gly Ser Gln Ala Val Lys Ala Met Lys Glu  
405 410 415

Glu Asn Val Lys Thr Val Leu Met Asn Pro Asn Ile Ala Ser Val Gln  
420 425 430

Thr Asn Glu Val Gly Leu Lys Gln Ala Asp Thr Val Tyr Phe Leu Pro  
435 440 445

Ile Thr Pro Gln Phe Val Thr Glu Val Ile Lys Ala Glu Gln Pro Asp  
450 455 460

Gly Leu Ile Leu Gly Met Gly Gly Gln Thr Ala Leu Asn Cys Gly Val  
465 470 475 480

Glu Leu Phe Lys Arg Gly Val Leu Lys Glu Tyr Gly Val Lys Val Leu  
485 490 495

Gly Thr Ser Val Glu Ser Ile Met Ala Thr Glu Asp Arg Gln Leu Phe  
500 505 510

Ser Asp Lys Leu Asn Glu Ile Asn Glu Lys Ile Ala Pro Ser Phe Ala  
515 520 525

Val Glu Ser Ile Glu Asp Ala Leu Lys Ala Ala Asp Thr Ile Gly Tyr  
530 535 540

Pro Val Met Ile Arg Ser Ala Tyr Ala Leu Gly Gly Leu Gly Ser Gly  
545 550 555 560

Ile Cys Pro Asn Arg Glu Thr Leu Met Asp Leu Ser Thr Lys Ala Phe  
565 570 575

Ala Met Thr Asn Gln Ile Leu Val Glu Lys Ser Val Thr Gly Trp Lys  
580 585 590

Glu Ile Glu Tyr Glu Val Val Arg Asp Ala Asp Asp Asn Cys Val Thr  
595 600 605

Val Cys Asn Met Glu Asn Val Asp Ala Met Gly Val His Thr Gly Asp  
610 615 620

Ser Val Val Val Ala Pro Ala Gln Thr Leu Ser Asn Ala Glu Phe Gln  
625 630 635 640

Met Leu Arg Arg Thr Ser Ile Asn Val Val Arg His Leu Gly Ile Val  
645 650 655

Gly Glu Cys Asn Ile Gln Phe Ala Leu His Pro Thr Ser Met Glu Tyr  
660 665 670

Cys Ile Ile Glu Val Asn Ala Arg Leu Ser Arg Ser Ser Ala Leu Ala  
675 680 685

Ser Lys Ala Thr Gly Tyr Pro Leu Ala Phe Ile Ala Ala Lys Ile Ala  
690 695 700

Leu Gly Ile Pro Leu Pro Glu Ile Lys Asn Val Val Ser Gly Lys Thr  
705 710 715 720

Ser Ala Cys Phe Glu Pro Ser Leu Asp Tyr Met Val Thr Lys Ile Pro  
725 730 735

Arg Trp Asp Leu Asp Arg Phe His Gly Thr Ser Ser Arg Ile Gly Ser  
740 745 750

Ser Met Lys Ser Val Gly Glu Val Met Ala Ile Gly Arg Thr Phe Glu  
755 760 765

Glu Ser Phe Gln Lys Ala Leu Arg Met Cys His Pro Ser Ile Glu Gly  
770 775 780

Phe Thr Pro Arg Leu Pro Met Asn Lys Glu Trp Pro Ser Asn Leu Asp  
785 790 795 800

Leu Arg Lys Glu Leu Ser Glu Pro Ser Ser Thr Arg Ile Tyr Ala Ile  
805 810 815

Ala Lys Ala Ile Asp Asp Asn Met Ser Leu Asp Glu Ile Glu Lys Leu  
820 825 830

Thr Tyr Ile Asp Lys Trp Phe Leu Tyr Lys Met Arg Asp Ile Leu Asn  
835 840 845

Met Glu Lys Thr Leu Lys Gly Leu Asn Ser Glu Ser Met Thr Glu Glu  
850 855 860

Thr Leu Lys Arg Ala Lys Glu Ile Gly Phe Ser Asp Lys Gln Ile Ser  
865 870 875 880

Lys Cys Leu Gly Leu Thr Glu Ala Gln Thr Arg Glu Leu Arg Leu Lys  
885 890 895

Lys Asn Ile His Pro Trp Val Lys Gln Ile Asp Thr Leu Ala Ala Glu  
900 905 910

Tyr Pro Ser Val Thr Asn Tyr Leu Tyr Val Thr Tyr Asn Gly Gln Glu  
915 920 925

His Asp Val Asn Phe Asp Asp His Gly Met Met Val Leu Gly Cys Gly  
930 935 940

Pro Tyr His Ile Gly Ser Ser Val Glu Phe Asp Trp Cys Ala Val Ser  
945 950 955 960

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

Cys Asn Pro Glu Thr Val Ser Thr Asp Phe Asp Glu Cys Asp Lys Leu  
980 985 990

Tyr Phe Glu Glu Leu Ser Leu Glu Arg Ile Leu Asp Ile Tyr His Gln  
995 1000 1005

Glu Ala Cys Gly Gly Cys Ile Ile Ser Val Gly Gly Gln Ile Pro  
1010 1015 1020

Asn Asn Leu Ala Val Pro Leu Tyr Lys Asn Gly Val Lys Ile Met  
1025 1030 1035

|      |     |     |     |     |     |      |     |     |     |     |      |     |     |     |
|------|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|------|-----|-----|-----|
| Gly  | Thr | Ser | Pro | Leu | Gln | Ile  | Asp | Arg | Ala | Glu | Asp  | Arg | Ser | Ile |
| 1040 |     |     |     |     |     | 1045 |     |     |     |     | 1050 |     |     |     |
| Phe  | Ser | Ala | Val | Leu | Asp | Glu  | Leu | Lys | Val | Ala | Gln  | Ala | Pro | Trp |
| 1055 |     |     |     |     |     | 1060 |     |     |     |     | 1065 |     |     |     |
| Lys  | Ala | Val | Asn | Thr | Leu | Asn  | Glu | Ala | Leu | Glu | Phe  | Ala | Lys | Ser |
| 1070 |     |     |     |     |     | 1075 |     |     |     |     | 1080 |     |     |     |
| Val  | Asp | Tyr | Pro | Cys | Leu | Leu  | Arg | Pro | Ser | Tyr | Val  | Leu | Ser | Gly |
| 1085 |     |     |     |     |     | 1090 |     |     |     |     | 1095 |     |     |     |
| Ser  | Ala | Met | Asn | Val | Val | Phe  | Ser | Glu | Asp | Glu | Met  | Lys | Lys | Phe |
| 1100 |     |     |     |     |     | 1105 |     |     |     |     | 1110 |     |     |     |
| Leu  | Glu | Glu | Ala | Thr | Arg | Val  | Ser | Gln | Glu | His | Pro  | Val | Val | Leu |
| 1115 |     |     |     |     |     | 1120 |     |     |     |     | 1125 |     |     |     |
| Thr  | Lys | Phe | Val | Glu | Gly | Ala  | Arg | Glu | Val | Glu | Met  | Asp | Ala | Val |
| 1130 |     |     |     |     |     | 1135 |     |     |     |     | 1140 |     |     |     |
| Gly  | Lys | Asp | Gly | Arg | Val | Ile  | Ser | His | Ala | Ile | Ser  | Glu | His | Val |
| 1145 |     |     |     |     |     | 1150 |     |     |     |     | 1155 |     |     |     |
| Glu  | Asp | Ala | Gly | Val | His | Ser  | Gly | Asp | Ala | Thr | Leu  | Met | Leu | Pro |
| 1160 |     |     |     |     |     | 1165 |     |     |     |     | 1170 |     |     |     |
| Thr  | Gln | Thr | Ile | Ser | Gln | Gly  | Ala | Ile | Glu | Lys | Val  | Lys | Asp | Ala |
| 1175 |     |     |     |     |     | 1180 |     |     |     |     | 1185 |     |     |     |
| Thr  | Arg | Lys | Ile | Ala | Lys | Ala  | Phe | Ala | Ile | Ser | Gly  | Pro | Phe | Asn |
| 1190 |     |     |     |     |     | 1195 |     |     |     |     | 1200 |     |     |     |
| Val  | Gln | Phe | Leu | Val | Lys | Gly  | Asn | Asp | Val | Leu | Val  | Ile | Glu | Cys |
| 1205 |     |     |     |     |     | 1210 |     |     |     |     | 1215 |     |     |     |
| Asn  | Leu | Arg | Ala | Ser | Arg | Ser  | Phe | Pro | Phe | Val | Ser  | Lys | Thr | Leu |
| 1220 |     |     |     |     |     | 1225 |     |     |     |     | 1230 |     |     |     |
| Gly  | Val | Asp | Phe | Ile | Asp | Val  | Ala | Thr | Lys | Val | Met  | Ile | Gly | Glu |
| 1235 |     |     |     |     |     | 1240 |     |     |     |     | 1245 |     |     |     |

Asn Val Asp Glu Lys His Leu Pro Thr Leu Asp His Pro Ile Ile  
1250 1255 1260

Pro Ala Asp Tyr Val Ala Ile Lys Ala Pro Met Phe Ser Trp Pro  
1265 1270 1275

Arg Leu Arg Asp Ala Asp Pro Ile Leu Arg Cys Glu Met Ala Ser  
1280 1285 1290

Thr Gly Glu Val Ala Cys Phe Gly Glu Gly Ile His Thr Ala Phe  
1295 1300 1305

Leu Lys Ala Met Leu Ser Thr Gly Phe Lys Ile Pro Gln Lys Gly  
1310 1315 1320

Ile Leu Ile Gly Ile Gln Gln Ser Phe Arg Pro Arg Phe Leu Gly  
1325 1330 1335

Val Ala Glu Gln Leu His Asn Glu Gly Phe Lys Leu Phe Ala Thr  
1340 1345 1350

Glu Ala Thr Ser Asp Trp Leu Asn Ala Asn Asn Val Pro Ala Thr  
1355 1360 1365

Pro Val Ala Trp Pro Ser Gln Glu Gly Gln Asn Pro Ser Leu Ser  
1370 1375 1380

Ser Ile Arg Lys Leu Ile Arg Asp Gly Ser Ile Asp Leu Val Ile  
1385 1390 1395

Asn Leu Pro Asn Asn Asn Thr Lys Phe Val His Asp Asn Tyr Val  
1400 1405 1410

Ile Arg Arg Thr Ala Val Asp Ser Gly Ile Pro Leu Leu Thr Asn  
1415 1420 1425

Phe Gln Val Thr Lys Leu Phe Ala Glu Ala Val Gln Lys Ser Arg  
1430 1435 1440

Lys Val Asp Ser Lys Ser Leu Phe His Tyr Arg Gln Tyr Ser Ala  
1445 1450 1455

Gly Lys Ala Ala  
1460

<210> 331

<211> 1053

<212> PRT

<213> Artificial Sequence

<220>

<221> source

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

<400> 331

Met Lys Arg Asn Tyr Ile Leu Gly Leu Asp Ile Gly Ile Thr Ser Val  
1 5 10 15

Gly Tyr Gly Ile Ile Asp Tyr Glu Thr Arg Asp Val Ile Asp Ala Gly  
20 25 30

Val Arg Leu Phe Lys Glu Ala Asn Val Glu Asn Asn Glu Gly Arg Arg  
35 40 45

Ser Lys Arg Gly Ala Arg Arg Leu Lys Arg Arg Arg Arg His Arg Ile  
50 55 60

Gln Arg Val Lys Lys Leu Leu Phe Asp Tyr Asn Leu Leu Thr Asp His  
65 70 75 80

Ser Glu Leu Ser Gly Ile Asn Pro Tyr Glu Ala Arg Val Lys Gly Leu  
85 90 95

Ser Gln Lys Leu Ser Glu Glu Glu Phe Ser Ala Ala Leu Leu His Leu  
100 105 110

Ala Lys Arg Arg Gly Val His Asn Val Asn Glu Val Glu Glu Asp Thr  
115 120 125

Gly Asn Glu Leu Ser Thr Lys Glu Gln Ile Ser Arg Asn Ser Lys Ala  
130 135 140

Leu Glu Glu Lys Tyr Val Ala Glu Leu Gln Leu Glu Arg Leu Lys Lys  
145 150 155 160

Asp Gly Glu Val Arg Gly Ser Ile Asn Arg Phe Lys Thr Ser Asp Tyr  
165 170 175

Val Lys Glu Ala Lys Gln Leu Leu Lys Val Gln Lys Ala Tyr His Gln  
180 185 190

Leu Asp Gln Ser Phe Ile Asp Thr Tyr Ile Asp Leu Leu Glu Thr Arg  
195 200 205

Arg Thr Tyr Tyr Glu Gly Pro Gly Glu Gly Ser Pro Phe Gly Trp Lys  
210 215 220

Asp Ile Lys Glu Trp Tyr Glu Met Leu Met Gly His Cys Thr Tyr Phe  
225 230 235 240

Pro Glu Glu Leu Arg Ser Val Lys Tyr Ala Tyr Asn Ala Asp Leu Tyr  
245 250 255

Asn Ala Leu Asn Asp Leu Asn Asn Leu Val Ile Thr Arg Asp Glu Asn  
260 265 270

Glu Lys Leu Glu Tyr Tyr Glu Lys Phe Gln Ile Ile Glu Asn Val Phe  
275 280 285

Lys Gln Lys Lys Lys Pro Thr Leu Lys Gln Ile Ala Lys Glu Ile Leu  
290 295 300

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

Pro Glu Phe Thr Asn Leu Lys Val Tyr His Asp Ile Lys Asp Ile Thr  
325 330 335

Ala Arg Lys Glu Ile Ile Glu Asn Ala Glu Leu Leu Asp Gln Ile Ala  
340 345 350

Lys Ile Leu Thr Ile Tyr Gln Ser Ser Glu Asp Ile Gln Glu Glu Leu

355

360

365

Thr Asn Leu Asn Ser Glu Leu Thr Gln Glu Glu Ile Glu Gln Ile Ser  
 370 375 380

Asn Leu Lys Gly Tyr Thr Gly Thr His Asn Leu Ser Leu Lys Ala Ile  
 385 390 395 400

Asn Leu Ile Leu Asp Glu Leu Trp His Thr Asn Asp Asn Gln Ile Ala  
 405 410 415

Ile Phe Asn Arg Leu Lys Leu Val Pro Lys Lys Val Asp Leu Ser Gln  
 420 425 430

Gln Lys Glu Ile Pro Thr Thr Leu Val Asp Asp Phe Ile Leu Ser Pro  
 435 440 445

Val Val Lys Arg Ser Phe Ile Gln Ser Ile Lys Val Ile Asn Ala Ile  
 450 455 460

Ile Lys Lys Tyr Gly Leu Pro Asn Asp Ile Ile Ile Glu Leu Ala Arg  
 465 470 475 480

Glu Lys Asn Ser Lys Asp Ala Gln Lys Met Ile Asn Glu Met Gln Lys  
 485 490 495

Arg Asn Arg Gln Thr Asn Glu Arg Ile Glu Glu Ile Ile Arg Thr Thr  
 500 505 510

Gly Lys Glu Asn Ala Lys Tyr Leu Ile Glu Lys Ile Lys Leu His Asp  
 515 520 525

Met Gln Glu Gly Lys Cys Leu Tyr Ser Leu Glu Ala Ile Pro Leu Glu  
 530 535 540

Asp Leu Leu Asn Asn Pro Phe Asn Tyr Glu Val Asp His Ile Ile Pro  
 545 550 555 560

Arg Ser Val Ser Phe Asp Asn Ser Phe Asn Asn Lys Val Leu Val Lys  
 565 570 575

Gln Glu Glu Asn Ser Lys Lys Gly Asn Arg Thr Pro Phe Gln Tyr Leu  
580 585 590

Ser Ser Ser Asp Ser Lys Ile Ser Tyr Glu Thr Phe Lys Lys His Ile  
595 600 605

Leu Asn Leu Ala Lys Gly Lys Gly Arg Ile Ser Lys Thr Lys Lys Glu  
610 615 620

Tyr Leu Leu Glu Glu Arg Asp Ile Asn Arg Phe Ser Val Gln Lys Asp  
625 630 635 640

Phe Ile Asn Arg Asn Leu Val Asp Thr Arg Tyr Ala Thr Arg Gly Leu  
645 650 655

Met Asn Leu Leu Arg Ser Tyr Phe Arg Val Asn Asn Leu Asp Val Lys  
660 665 670

Val Lys Ser Ile Asn Gly Gly Phe Thr Ser Phe Leu Arg Arg Lys Trp  
675 680 685

Lys Phe Lys Lys Glu Arg Asn Lys Gly Tyr Lys His His Ala Glu Asp  
690 695 700

Ala Leu Ile Ile Ala Asn Ala Asp Phe Ile Phe Lys Glu Trp Lys Lys  
705 710 715 720

Leu Asp Lys Ala Lys Lys Val Met Glu Asn Gln Met Phe Glu Glu Lys  
725 730 735

Gln Ala Glu Ser Met Pro Glu Ile Glu Thr Glu Gln Glu Tyr Lys Glu  
740 745 750

Ile Phe Ile Thr Pro His Gln Ile Lys His Ile Lys Asp Phe Lys Asp  
755 760 765

Tyr Lys Tyr Ser His Arg Val Asp Lys Lys Pro Asn Arg Glu Leu Ile  
770 775 780

Asn Asp Thr Leu Tyr Ser Thr Arg Lys Asp Asp Lys Gly Asn Thr Leu

|                                                                 |  |     |  |      |  |      |
|-----------------------------------------------------------------|--|-----|--|------|--|------|
| 785                                                             |  | 790 |  | 795  |  | 800  |
| Ile Val Asn Asn Leu Asn Gly Leu Tyr Asp Lys Asp Asn Asp Lys Leu |  |     |  |      |  |      |
|                                                                 |  | 805 |  | 810  |  | 815  |
| Lys Lys Leu Ile Asn Lys Ser Pro Glu Lys Leu Leu Met Tyr His His |  |     |  |      |  |      |
|                                                                 |  | 820 |  | 825  |  | 830  |
| Asp Pro Gln Thr Tyr Gln Lys Leu Lys Leu Ile Met Glu Gln Tyr Gly |  |     |  |      |  |      |
|                                                                 |  | 835 |  | 840  |  | 845  |
| Asp Glu Lys Asn Pro Leu Tyr Lys Tyr Tyr Glu Glu Thr Gly Asn Tyr |  |     |  |      |  |      |
|                                                                 |  | 850 |  | 855  |  | 860  |
| Leu Thr Lys Tyr Ser Lys Lys Asp Asn Gly Pro Val Ile Lys Lys Ile |  |     |  |      |  |      |
| 865                                                             |  | 870 |  | 875  |  | 880  |
| Lys Tyr Tyr Gly Asn Lys Leu Asn Ala His Leu Asp Ile Thr Asp Asp |  |     |  |      |  |      |
|                                                                 |  | 885 |  | 890  |  | 895  |
| Tyr Pro Asn Ser Arg Asn Lys Val Val Lys Leu Ser Leu Lys Pro Tyr |  |     |  |      |  |      |
|                                                                 |  | 900 |  | 905  |  | 910  |
| Arg Phe Asp Val Tyr Leu Asp Asn Gly Val Tyr Lys Phe Val Thr Val |  |     |  |      |  |      |
|                                                                 |  | 915 |  | 920  |  | 925  |
| Lys Asn Leu Asp Val Ile Lys Lys Glu Asn Tyr Tyr Glu Val Asn Ser |  |     |  |      |  |      |
|                                                                 |  | 930 |  | 935  |  | 940  |
| Lys Cys Tyr Glu Glu Ala Lys Lys Leu Lys Lys Ile Ser Asn Gln Ala |  |     |  |      |  |      |
| 945                                                             |  | 950 |  | 955  |  | 960  |
| Glu Phe Ile Ala Ser Phe Tyr Asn Asn Asp Leu Ile Lys Ile Asn Gly |  |     |  |      |  |      |
|                                                                 |  | 965 |  | 970  |  | 975  |
| Glu Leu Tyr Arg Val Ile Gly Val Asn Asn Asp Leu Leu Asn Arg Ile |  |     |  |      |  |      |
|                                                                 |  | 980 |  | 985  |  | 990  |
| Glu Val Asn Met Ile Asp Ile Thr Tyr Arg Glu Tyr Leu Glu Asn Met |  |     |  |      |  |      |
|                                                                 |  | 995 |  | 1000 |  | 1005 |

Asn Asp Lys Arg Pro Pro Arg Ile Ile Lys Thr Ile Ala Ser Lys  
1010 1015 1020

Thr Gln Ser Ile Lys Lys Tyr Ser Thr Asp Ile Leu Gly Asn Leu  
1025 1030 1035

Tyr Glu Val Lys Ser Lys Lys His Pro Gln Ile Ile Lys Lys Gly  
1040 1045 1050

<210> 332

<211> 1353

<212> PRT

<213> Artificial Sequence

<220>

<221> source

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

<400> 332

Ala Ala Gly Gly Ile Leu His Leu Glu Leu Leu Val Ala Val Gly Pro  
1 5 10 15

Asp Val Phe Gln Ala His Gln Glu Asp Thr Glu Arg Tyr Val Leu Thr  
20 25 30

Asn Leu Asn Ile Gly Ala Glu Leu Leu Arg Asp Pro Ser Leu Gly Ala  
35 40 45

Gln Phe Arg Val His Leu Val Lys Met Val Ile Leu Thr Glu Pro Glu  
50 55 60

Gly Ala Pro Asn Ile Thr Ala Asn Leu Thr Ser Ser Leu Leu Ser Val  
65 70 75 80

Cys Gly Trp Ser Gln Thr Ile Asn Pro Glu Asp Asp Thr Asp Pro Gly  
85 90 95

His Ala Asp Leu Val Leu Tyr Ile Thr Arg Phe Asp Leu Glu Leu Pro  
100 105 110

Asp Gly Asn Arg Gln Val Arg Gly Val Thr Gln Leu Gly Gly Ala Cys  
115 120 125

Ser Pro Thr Trp Ser Cys Leu Ile Thr Glu Asp Thr Gly Phe Asp Leu  
130 135 140

Gly Val Thr Ile Ala His Glu Ile Gly His Ser Phe Gly Leu Glu His  
145 150 155 160

Asp Gly Ala Pro Gly Ser Gly Cys Gly Pro Ser Gly His Val Met Ala  
165 170 175

Ser Asp Gly Ala Ala Pro Arg Ala Gly Leu Ala Trp Ser Pro Cys Ser  
180 185 190

Arg Arg Gln Leu Leu Ser Leu Leu Ser Ala Gly Arg Ala Arg Cys Val  
195 200 205

Trp Asp Pro Pro Arg Pro Gln Pro Gly Ser Ala Gly His Pro Pro Asp  
210 215 220

Ala Gln Pro Gly Leu Tyr Tyr Ser Ala Asn Glu Gln Cys Arg Val Ala  
225 230 235 240

Phe Gly Pro Lys Ala Val Ala Cys Thr Phe Ala Arg Glu His Leu Asp  
245 250 255

Met Cys Gln Ala Leu Ser Cys His Thr Asp Pro Leu Asp Gln Ser Ser  
260 265 270

Cys Ser Arg Leu Leu Val Pro Leu Leu Asp Gly Thr Glu Cys Gly Val  
275 280 285

Glu Lys Trp Cys Ser Lys Gly Arg Cys Arg Ser Leu Val Glu Leu Thr  
290 295 300

Pro Ile Ala Ala Val His Gly Arg Trp Ser Ser Trp Gly Pro Arg Ser  
305 310 315 320

Pro Cys Ser Arg Ser Cys Gly Gly Gly Val Val Thr Arg Arg Arg Gln  
325 330 335

Cys Asn Asn Pro Arg Pro Ala Phe Gly Gly Arg Ala Cys Val Gly Ala  
340 345 350

Asp Leu Gln Ala Glu Met Cys Asn Thr Gln Ala Cys Glu Lys Thr Gln  
355 360 365

Leu Glu Phe Met Ser Gln Gln Cys Ala Arg Thr Asp Gly Gln Pro Leu  
370 375 380

Arg Ser Ser Pro Gly Gly Ala Ser Phe Tyr His Trp Gly Ala Ala Val  
385 390 395 400

Pro His Ser Gln Gly Asp Ala Leu Cys Arg His Met Cys Arg Ala Ile  
405 410 415

Gly Glu Ser Phe Ile Met Lys Arg Gly Asp Ser Phe Leu Asp Gly Thr  
420 425 430

Arg Cys Met Pro Ser Gly Pro Arg Glu Asp Gly Thr Leu Ser Leu Cys  
435 440 445

Val Ser Gly Ser Cys Arg Thr Phe Gly Cys Asp Gly Arg Met Asp Ser  
450 455 460

Gln Gln Val Trp Asp Arg Cys Gln Val Cys Gly Gly Asp Asn Ser Thr  
465 470 475 480

Cys Ser Pro Arg Lys Gly Ser Phe Thr Ala Gly Arg Ala Arg Glu Tyr  
485 490 495

Val Thr Phe Leu Thr Val Thr Pro Asn Leu Thr Ser Val Tyr Ile Ala  
500 505 510

Asn His Arg Pro Leu Phe Thr His Leu Ala Val Arg Ile Gly Gly Arg  
515 520 525

Tyr Val Val Ala Gly Lys Met Ser Ile Ser Pro Asn Thr Thr Tyr Pro  
530 535 540

Ser Leu Leu Glu Asp Gly Arg Val Glu Tyr Arg Val Ala Leu Thr Glu  
545 550 555 560

Asp Arg Leu Pro Arg Leu Glu Glu Ile Arg Ile Trp Gly Pro Leu Gln  
565 570 575

Glu Asp Ala Asp Ile Gln Val Tyr Arg Arg Tyr Gly Glu Glu Tyr Gly  
580 585 590

Asn Leu Thr Arg Pro Asp Ile Thr Phe Thr Tyr Phe Gln Pro Lys Pro  
595 600 605

Arg Gln Ala Trp Val Trp Ala Ala Val Arg Gly Pro Cys Ser Val Ser  
610 615 620

Cys Gly Ala Gly Leu Arg Trp Val Asn Tyr Ser Cys Leu Asp Gln Ala  
625 630 635 640

Arg Lys Glu Leu Val Glu Thr Val Gln Cys Gln Gly Ser Gln Gln Pro  
645 650 655

Pro Ala Trp Pro Glu Ala Cys Val Leu Glu Pro Cys Pro Pro Tyr Trp  
660 665 670

Ala Val Gly Asp Phe Gly Pro Cys Ser Ala Ser Cys Gly Gly Gly Leu  
675 680 685

Arg Glu Arg Pro Val Arg Cys Val Glu Ala Gln Gly Ser Leu Leu Lys  
690 695 700

Thr Leu Pro Pro Ala Arg Cys Arg Ala Gly Ala Gln Gln Pro Ala Val  
705 710 715 720

Ala Leu Glu Thr Cys Asn Pro Gln Pro Cys Pro Ala Arg Trp Glu Val  
725 730 735

Ser Glu Pro Ser Ser Cys Thr Ser Ala Gly Gly Ala Gly Leu Ala Leu  
740 745 750

Glu Asn Glu Thr Cys Val Pro Gly Ala Asp Gly Leu Glu Ala Pro Val  
755 760 765

Thr Glu Gly Pro Gly Ser Val Asp Glu Lys Leu Pro Ala Pro Glu Pro  
770 775 780

Cys Val Gly Met Ser Cys Pro Pro Gly Trp Gly His Leu Asp Ala Thr  
785 790 795 800

Ser Ala Gly Glu Lys Ala Pro Ser Pro Trp Gly Ser Ile Arg Thr Gly  
805 810 815

Ala Gln Ala Ala His Val Trp Thr Pro Ala Ala Gly Ser Cys Ser Val  
820 825 830

Ser Cys Gly Arg Gly Leu Met Glu Leu Arg Phe Leu Cys Met Asp Ser  
835 840 845

Ala Leu Arg Val Pro Val Gln Glu Glu Leu Cys Gly Leu Ala Ser Lys  
850 855 860

Pro Gly Ser Arg Arg Glu Val Cys Gln Ala Val Pro Cys Pro Ala Arg  
865 870 875 880

Trp Gln Tyr Lys Leu Ala Ala Cys Ser Val Ser Cys Gly Arg Gly Val  
885 890 895

Val Arg Arg Ile Leu Tyr Cys Ala Arg Ala His Gly Glu Asp Asp Gly  
900 905 910

Glu Glu Ile Leu Leu Asp Thr Gln Cys Gln Gly Leu Pro Arg Pro Glu  
915 920 925

Pro Gln Glu Ala Cys Ser Leu Glu Pro Cys Pro Pro Arg Trp Lys Val  
930 935 940

Met Ser Leu Gly Pro Cys Ser Ala Ser Cys Gly Leu Gly Thr Ala Arg  
945 950 955 960

Arg Ser Val Ala Cys Val Gln Leu Asp Gln Gly Gln Asp Val Glu Val  
965 970 975

Asp Glu Ala Ala Cys Ala Ala Leu Val Arg Pro Glu Ala Ser Val Pro  
980 985 990

Cys Leu Ile Ala Asp Cys Thr Tyr Arg Trp His Val Gly Thr Trp Met  
995 1000 1005

Glu Cys Ser Val Ser Cys Gly Asp Gly Ile Gln Arg Arg Arg Asp  
1010 1015 1020

Thr Cys Leu Gly Pro Gln Ala Gln Ala Pro Val Pro Ala Asp Phe  
1025 1030 1035

Cys Gln His Leu Pro Lys Pro Val Thr Val Arg Gly Cys Trp Ala  
1040 1045 1050

Gly Pro Cys Val Gly Gln Gly Thr Pro Ser Leu Val Pro His Glu  
1055 1060 1065

Glu Ala Ala Ala Pro Gly Arg Thr Thr Ala Thr Pro Ala Gly Ala  
1070 1075 1080

Ser Leu Glu Trp Ser Gln Ala Arg Gly Leu Leu Phe Ser Pro Ala  
1085 1090 1095

Pro Gln Pro Arg Arg Leu Leu Pro Gly Pro Gln Glu Asn Ser Val  
1100 1105 1110

Gln Ser Ser Ala Cys Gly Arg Gln His Leu Glu Pro Thr Gly Thr  
1115 1120 1125

Ile Asp Met Arg Gly Pro Gly Gln Ala Asp Cys Ala Val Ala Ile  
1130 1135 1140

Gly Arg Pro Leu Gly Glu Val Val Thr Leu Arg Val Leu Glu Ser  
1145 1150 1155

Ser Leu Asn Cys Ser Ala Gly Asp Met Leu Leu Leu Trp Gly Arg  
1160 1165 1170

Leu Thr Trp Arg Lys Met Cys Arg Lys Leu Leu Asp Met Thr Phe  
1175 1180 1185

Ser Ser Lys Thr Asn Thr Leu Val Val Arg Gln Arg Cys Gly Arg  
1190 1195 1200

Pro Gly Gly Gly Val Leu Leu Arg Tyr Gly Ser Gln Leu Ala Pro  
1205 1210 1215

Glu Thr Phe Tyr Arg Glu Cys Asp Met Gln Leu Phe Gly Pro Trp  
1220 1225 1230

Gly Glu Ile Val Ser Pro Ser Leu Ser Pro Ala Thr Ser Asn Ala  
1235 1240 1245

Gly Gly Cys Arg Leu Phe Ile Asn Val Ala Pro His Ala Arg Ile  
1250 1255 1260

Ala Ile His Ala Leu Ala Thr Asn Met Gly Ala Gly Thr Glu Gly  
1265 1270 1275

Ala Asn Ala Ser Tyr Ile Leu Ile Arg Asp Thr His Ser Leu Arg  
1280 1285 1290

Thr Thr Ala Phe His Gly Gln Gln Val Leu Tyr Trp Glu Ser Glu  
1295 1300 1305

Ser Ser Gln Ala Glu Met Glu Phe Ser Glu Gly Phe Leu Lys Ala  
1310 1315 1320

Gln Ala Ser Leu Arg Gly Gln Tyr Trp Thr Leu Gln Ser Trp Val  
1325 1330 1335

Pro Glu Met Gln Asp Pro Gln Ser Trp Lys Gly Lys Glu Gly Thr  
1340 1345 1350

<210> 333

<211> 431

<212> PRT

<213> Artificial Sequence

<220>

<221> source

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

<400> 333

Met Pro Asn Pro Arg Pro Gly Lys Pro Ser Ala Pro Ser Leu Ala Leu  
1 5 10 15

Gly Pro Ser Pro Gly Ala Ser Pro Ser Trp Arg Ala Ala Pro Lys Ala  
20 25 30

Ser Asp Leu Leu Gly Ala Arg Gly Pro Gly Gly Thr Phe Gln Gly Arg  
35 40 45

Asp Leu Arg Gly Gly Ala His Ala Ser Ser Ser Ser Leu Asn Pro Met  
50 55 60

Pro Pro Ser Gln Leu Gln Leu Pro Thr Leu Pro Leu Val Met Val Ala  
65 70 75 80

Pro Ser Gly Ala Arg Leu Gly Pro Leu Pro His Leu Gln Ala Leu Leu  
85 90 95

Gln Asp Arg Pro His Phe Met His Gln Leu Ser Thr Val Asp Ala His  
100 105 110

Ala Arg Thr Pro Val Leu Gln Val His Pro Leu Glu Ser Pro Ala Met  
115 120 125

Ile Ser Leu Thr Pro Pro Thr Thr Ala Thr Gly Val Phe Ser Leu Lys  
130 135 140

Ala Arg Pro Gly Leu Pro Pro Gly Ile Asn Val Ala Ser Leu Glu Trp  
145 150 155 160

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

Pro Arg Lys Asp Ser Thr Leu Ser Ala Val Pro Gln Ser Ser Tyr Pro  
180 185 190

Leu Leu Ala Asn Gly Val Cys Lys Trp Pro Gly Cys Glu Lys Val Phe  
195 200 205

Glu Glu Pro Glu Asp Phe Leu Lys His Cys Gln Ala Asp His Leu Leu

210

215

220

Asp Glu Lys Gly Arg Ala Gln Cys Leu Leu Gln Arg Glu Met Val Gln  
 225 230 235 240

Ser Leu Glu Gln Gln Leu Val Leu Glu Lys Glu Lys Leu Ser Ala Met  
 245 250 255

Gln Ala His Leu Ala Gly Lys Met Ala Leu Thr Lys Ala Ser Ser Val  
 260 265 270

Ala Ser Ser Asp Lys Gly Ser Cys Cys Ile Val Ala Ala Gly Ser Gln  
 275 280 285

Gly Pro Val Val Pro Ala Trp Ser Gly Pro Arg Glu Ala Pro Asp Ser  
 290 295 300

Leu Phe Ala Val Arg Arg His Leu Trp Gly Ser His Gly Asn Ser Thr  
 305 310 315 320

Phe Pro Glu Phe Leu His Asn Met Asp Tyr Phe Lys Phe His Asn Met  
 325 330 335

Arg Pro Pro Phe Thr Tyr Ala Thr Leu Ile Arg Trp Ala Ile Leu Glu  
 340 345 350

Ala Pro Glu Lys Gln Arg Thr Leu Asn Glu Ile Tyr His Trp Phe Thr  
 355 360 365

Arg Met Phe Ala Phe Phe Arg Asn His Pro Ala Thr Trp Lys Asn Ala  
 370 375 380

Ile Arg His Asn Leu Ser Leu His Lys Cys Phe Val Arg Val Glu Ser  
 385 390 395 400

Glu Lys Gly Ala Val Trp Thr Val Asp Glu Leu Glu Phe Arg Lys Lys  
 405 410 415

Arg Ser Gln Arg Pro Ser Arg Cys Ser Asn Pro Thr Pro Gly Pro  
 420 425 430

<210> 334  
<211> 160  
<212> PRT  
<213> Artificial Sequence

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

<400> 334  
Ser Pro Gly Gln Gly Thr Gln Ser Glu Asn Ser Cys Thr His Phe Pro  
1 5 10 15

Gly Asn Leu Pro Asn Met Leu Arg Asp Leu Arg Asp Ala Phe Ser Arg  
20 25 30

Val Lys Thr Phe Phe Gln Met Lys Asp Gln Leu Asp Asn Leu Leu Leu  
35 40 45

Lys Glu Ser Leu Leu Glu Asp Phe Lys Gly Tyr Leu Gly Cys Gln Ala  
50 55 60

Leu Ser Glu Met Ile Gln Phe Tyr Leu Glu Glu Val Met Pro Gln Ala  
65 70 75 80

Glu Asn Gln Asp Pro Asp Ile Lys Ala His Val Asn Ser Leu Gly Glu  
85 90 95

Asn Leu Lys Thr Leu Arg Leu Arg Leu Arg Arg Cys His Arg Phe Leu  
100 105 110

Pro Cys Glu Asn Lys Ser Lys Ala Val Glu Gln Val Lys Asn Ala Phe  
115 120 125

Asn Lys Leu Gln Glu Lys Gly Ile Tyr Lys Ala Met Ser Glu Phe Asp  
130 135 140

Ile Phe Ile Asn Tyr Ile Glu Ala Tyr Met Thr Met Lys Ile Arg Asn  
145 150 155 160

<210> 335  
<211> 133

<212> PRT  
<213> Artificial Sequence

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

<400> 335  
Ala Pro Thr Ser Ser Ser Thr Lys Lys Thr Gln Leu Gln Leu Glu His  
1 5 10 15

Leu Leu Leu Asp Leu Gln Met Ile Leu Asn Gly Ile Asn Asn Tyr Lys  
20 25 30

Asn Pro Lys Leu Thr Arg Met Leu Thr Phe Lys Phe Tyr Met Pro Lys  
35 40 45

Lys Ala Thr Glu Leu Lys His Leu Gln Cys Leu Glu Glu Glu Leu Lys  
50 55 60

Pro Leu Glu Glu Val Leu Asn Leu Ala Gln Ser Lys Asn Phe His Leu  
65 70 75 80

Arg Pro Arg Asp Leu Ile Ser Asn Ile Asn Val Ile Val Leu Glu Leu  
85 90 95

Lys Gly Ser Glu Thr Thr Phe Met Cys Glu Tyr Ala Asp Glu Thr Ala  
100 105 110

Thr Ile Val Glu Phe Leu Asn Arg Trp Ile Thr Phe Cys Gln Ser Ile  
115 120 125

Ile Ser Thr Leu Thr  
130

<210> 336  
<211> 37  
<212> DNA  
<213> Artificial Sequence

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

<400> 336

gagacgtttt cttgggtcta ccgtttaata ttgcgtc

37