

# SEQUENCE LISTING

<110> DUKE UNIVERSITY  
 MACROGENICS, INC.  
 UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

<120> BISPECIFIC MOLECULES COMPRISING AN HIV-1 ENVELOPE TARGETING ARM

<130> 1234300.00141w01

<140> PCT/US2015/053027  
 <141> 2015-09-29

<150> 62/206,586  
 <151> 2015-08-18

<150> 62/056,834  
 <151> 2014-09-29

<160> 82

<170> PatentIn version 3.5

<210> 1  
 <211> 8  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 1  
 Gly Gly Gly Ser Gly Gly Gly Gly  
 1 5

<210> 2  
 <211> 6  
 <212> PRT  
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<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 2  
 Gly Gly Cys Gly Gly Gly  
 1 5

<210> 3  
 <211> 7  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 3  
 Gly Val Glu Pro Lys Ser Cys  
 1 5

<210> 4  
 <211> 6  
 <212> PRT  
 <213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<400> 4  
Val Glu Pro Lys Ser Cys  
1 5

<210> 5  
<211> 7  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<400> 5  
Gly Phe Asn Arg Gly Glu Cys  
1 5

<210> 6  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<400> 6  
Phe Asn Arg Gly Glu Cys  
1 5

<210> 7  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<400> 7  
Glu Val Ala Ala Leu Glu Lys Glu Val Ala Ala Leu Glu Lys Glu Val  
1 5 10 15

Ala Ala Leu Glu Lys Glu Val Ala Ala Leu Glu Lys  
20 25

<210> 8  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<400> 8  
Lys Val Ala Ala Leu Lys Glu Lys Val Ala Ala Leu Lys Glu Lys Val  
1 5 10 15

Ala Ala Leu Lys Glu Lys Val Ala Ala Leu Lys Glu  
20 25

<210> 9

<211> 277

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 9

Gln Ser Ala Leu Thr Gln Pro Pro Ser Ala Ser Gly Ser Pro Gly Gln  
1 5 10 15

Ser Val Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Gly Tyr  
20 25 30

Asn Tyr Val Ser Trp Tyr Gln His His Pro Gly Lys Ala Pro Lys Leu  
35 40 45

Ile Ile Ser Glu Val Asn Asn Arg Pro Ser Gly Val Pro Asp Arg Phe  
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu  
65 70 75 80

Gln Ala Glu Asp Glu Ala Glu Tyr Tyr Cys Ser Ser Tyr Thr Asp Ile  
85 90 95

His Asn Phe Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly  
100 105 110

Gly Ser Gly Gly Gly Gly Glu Val Gln Leu Val Glu Ser Gly Gly Gly  
115 120 125

Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly  
130 135 140

Phe Thr Phe Ser Thr Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly  
145 150 155 160

Lys Gly Leu Glu Trp Val Gly Arg Ile Arg Ser Lys Tyr Asn Asn Tyr  
165 170 175

Ala Thr Tyr Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg  
180 185 190

Asp Asp Ser Lys Asn Ser Leu Tyr Leu Gln Met Asn Ser Leu Lys Thr  
195 200 205

Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn  
210 215 220

Ser Tyr Val Ser Trp Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr  
 225 230 235 240

Val Ser Ser Gly Gly Cys Gly Gly Gly Glu Val Ala Ala Leu Glu Lys  
 245 250 255

Glu Val Ala Ala Leu Glu Lys Glu Val Ala Ala Leu Glu Lys Glu Val  
 260 265 270

Ala Ala Leu Glu Lys  
 275

<210> 10

<211> 831

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 10

|                                                                    |     |
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| cagagcgac tgactcagcc cccttccgcc tccgggtctc ctggacagag cgtgacaatc   | 60  |
| tcatgcactg ggacttcaag cgatgtgggc ggggtacaact atgtgagttg gtaccagcac | 120 |
| catcccggga aggcacctaa actgatcatt agcgaagtga acaatcgacc aagcggcgtc  | 180 |
| cccgaccggt tcagcggcag caagtctggc aataccgcc gtctgacagt ctcaggcctg   | 240 |
| caggccgagg atgaagctga gtactattgc tcatcataca ctgacatcca taacttcgtc  | 300 |
| ttcggcggcg gaactaaact gaccgtgctg ggtggcggtat ccggcggcgg aggcgaggtg | 360 |
| cagctgggtg agtctggggg aggcttggtc cagcctggag ggtccctgag actctcctgt  | 420 |
| gcagcctctg gattcacctt cagcacatac gctatgaatt ggggccgcc ggctccaggg   | 480 |
| aaggggctgg agtgggttgg aaggatcagg tccaagtaca acaattatgc aacctactat  | 540 |
| gccgactctg tgaagggtag attcaccatc tcaagagatg attcaaagaa ctcactgtat  | 600 |
| ctgcaaatga acagcctgaa aaccgaggac acggccgtgt attactgtgt gagacacggt  | 660 |
| aacttcggca attcttacgt gtcttggttt gcttattggg gacaggggac actggtgact  | 720 |
| gtgtcttccg gaggatgtgg cggtgagaa gtggccgcac tggagaaaga ggttgctgct   | 780 |
| ttggagaagg aggtcgctgc acttgaaaag gaggtcgag ccctggagaa a            | 831 |

<210> 11

<211> 275

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 11

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

Thr Val Thr Leu Thr Cys Arg Ser Ser Thr Gly Ala Val Thr Thr Ser  
 20 25 30  
 Asn Tyr Ala Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly  
 35 40 45  
 Leu Ile Gly Gly Thr Asn Lys Arg Ala Pro Trp Thr Pro Ala Arg Phe  
 50 55 60  
 Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Ile Thr Gly Ala  
 65 70 75 80  
 Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn  
 85 90 95  
 Leu Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly  
 100 105 110  
 Gly Ser Gly Gly Gly Gly Gln Val Gln Leu Gln Glu Ser Gly Pro Gly  
 115 120 125  
 Leu Val Lys Pro Ser Gln Thr Leu Ser Leu Ser Cys Thr Val Ser Gly  
 130 135 140  
 Gly Ser Ser Ser Ser Gly Ala His Tyr Trp Ser Trp Ile Arg Gln Tyr  
 145 150 155 160  
 Pro Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile His Tyr Ser Gly Asn  
 165 170 175  
 Thr Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Ile Thr Ile Ser Gln His  
 180 185 190  
 Thr Ser Glu Asn Gln Phe Ser Leu Lys Leu Asn Ser Val Thr Val Ala  
 195 200 205  
 Asp Thr Ala Val Tyr Tyr Cys Ala Arg Gly Thr Arg Leu Arg Thr Leu  
 210 215 220  
 Arg Asn Ala Phe Asp Ile Trp Gly Gln Gly Thr Leu Val Thr Val Ser  
 225 230 235 240  
 Ser Gly Gly Cys Gly Gly Gly Lys Val Ala Ala Leu Lys Glu Lys Val  
 245 250 255  
 Ala Ala Leu Lys Glu Lys Val Ala Ala Leu Lys Glu Lys Val Ala Ala  
 260 265 270  
 Leu Lys Glu  
 275

<210> 12  
 <211> 825  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 12  
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 acatgcagat ccagcacagg cgcagtgacc acatctaact acgccaattg ggtgcagcag 120  
 aagccaggac aggcaccaag gggcctgatc ggggggtacaa aaaaaagggc tccctggacc 180  
 cctgcacggg tttctggaag tctgctgggc ggaaaggccg ctctgactat taccggggca 240  
 caggccgagg acgaagccga ttactattgt gctctgtggg atagcaatct gtgggtgttc 300  
 ggggggtggc caaaactgac tgtgctggga ggggggtggat ccggcggcgg aggccagggtg 360  
 cagctgcagg agtccggccc cggactgggc aaaccctctc agactctgtc tctgtcatgt 420  
 accgtgtcag gcggctcttc cagctccggg gcacactact ggagctggat caggcagtat 480  
 cccggcaagg ggctggagtg gatcggatac attcattata gcggcaacac atactataat 540  
 ccttctctga agagtcggat cactatttca cagcacacca gcgaaaacca gttcagcctg 600  
 aagctgaaca gcgtgaccgt cgccgacaca gccgtgtact attgcgcccc gggcaccaga 660  
 ctgagaactc tgagaaacgc atttgacatc tggggacagg ggacactggg gacagtgagc 720  
 tccggaggat gtggcggtgg aaaagtggcc gactgaagg agaaagttgc tgctttgaaa 780  
 gagaaggctc ccgcacttaa ggaaaagggtc gcagccctga aagag 825

<210> 13  
 <211> 280  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 13  
 Asp Ile Val Met Thr Gln Ser Pro Asp Ser Leu Ala Val Ser Pro Gly  
 1 5 10 15  
 Glu Arg Ala Thr Ile His Cys Lys Ser Ser Gln Thr Leu Leu Tyr Ser  
 20 25 30  
 Ser Asn Asn Arg His Ser Ile Ala Trp Tyr Gln Gln Arg Pro Gly Gln  
 35 40 45  
 Pro Pro Lys Leu Leu Leu Tyr Trp Ala Ser Met Arg Leu Ser Gly Val  
 50 55 60  
 Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
 65 70 75 80

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

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

Lys Gly Gly Gly Ser Gly Gly Gly Gly Glu Val Gln Leu Val Glu Ser  
115 120 125

Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala  
130 135 140

Ala Ser Gly Phe Thr Phe Ser Thr Tyr Ala Met Asn Trp Val Arg Gln  
145 150 155 160

Ala Pro Gly Lys Gly Leu Glu Trp Val Gly Arg Ile Arg Ser Lys Tyr  
165 170 175

Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr  
180 185 190

Ile Ser Arg Asp Asp Ser Lys Asn Ser Leu Tyr Leu Gln Met Asn Ser  
195 200 205

Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn  
210 215 220

Phe Gly Asn Ser Tyr Val Ser Trp Phe Ala Tyr Trp Gly Gln Gly Thr  
225 230 235 240

Leu Val Thr Val Ser Ser Gly Gly Cys Gly Gly Gly Glu Val Ala Ala  
245 250 255

Leu Glu Lys Glu Val Ala Ala Leu Glu Lys Glu Val Ala Ala Leu Glu  
260 265 270

Lys Glu Val Ala Ala Leu Glu Lys  
275 280

<210> 14

<211> 840

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 14

gacatcgtga tgaccagtc tccagactcc ctggctgtgt ctccgggcga gagggccacc 60

atccactgca agtccagcca gactcttttg tacagctcca acaatagaca ctccattgct 120

tggtaccaac agagaccagg acagcctcct aaattactcc tttattgggc atctatgcgg 180

|                                                                     |     |
|---------------------------------------------------------------------|-----|
| ctttccgggg tccctgaccg attcagtggc agcgggtctg ggacagattt cactctcacc   | 240 |
| atcaacaacc tgcaggctga ggatgtggcc atctattact gtcaccaata ttccagtcac   | 300 |
| ccccgacgt tcggccacgg gaccaggggtg gagatcaaag gtggaggatc cggcggcgga   | 360 |
| ggcgagggtgc agctgggtgga gtctggggga ggcttggtcc agcctggagg gtccctgaga | 420 |
| ctctcctgtg cagcctctgg attcaccttc agcacatacg ctatgaattg ggtccgccag   | 480 |
| gctccaggga aggggctgga gtgggttggg aggatcaggt ccaagtacaa caattatgca   | 540 |
| acctactatg ccgactctgt gaagggtaga ttcaccatct caagagatga ttcaaagaac   | 600 |
| tcactgtatc tgcaaatgaa cagcctgaaa accgaggaca cggccgtgta ttactgtgtg   | 660 |
| agacacggta acttcggcaa ttcttacgtg tcttggtttg cttattgggg acaggggaca   | 720 |
| ctggtgactg tgtcttccgg aggatgtggc ggtggagaag tggccgcact ggagaaagag   | 780 |
| gttgctgctt tggagaagga ggtcgctgca cttgaaaagg aggtcgcagc cctggagaaa   | 840 |

<210> 15

<211> 278

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 15

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Ala | Val | Val | Thr | Gln | Glu | Pro | Ser | Leu | Thr | Val | Ser | Pro | Gly | Gly |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Val | Thr | Leu | Thr | Cys | Arg | Ser | Ser | Thr | Gly | Ala | Val | Thr | Thr | Ser |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Tyr | Ala | Asn | Trp | Val | Gln | Gln | Lys | Pro | Gly | Gln | Ala | Pro | Arg | Gly |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ile | Gly | Gly | Thr | Asn | Lys | Arg | Ala | Pro | Trp | Thr | Pro | Ala | Arg | Phe |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Gly | Ser | Leu | Leu | Gly | Gly | Lys | Ala | Ala | Leu | Thr | Ile | Thr | Gly | Ala |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Ala | Glu | Asp | Glu | Ala | Asp | Tyr | Tyr | Cys | Ala | Leu | Trp | Tyr | Ser | Asn |
|     |     |     | 85  |     |     |     |     |     | 90  |     |     |     |     | 95  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Trp | Val | Phe | Gly | Gly | Gly | Thr | Lys | Leu | Thr | Val | Leu | Gly | Gly | Gly |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ser | Gly | Gly | Gly | Gly | Gln | Val | Gln | Leu | Val | Gln | Ser | Gly | Gly | Gly |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Phe | Lys | Pro | Gly | Gly | Ser | Leu | Arg | Leu | Ser | Cys | Glu | Ala | Ser | Gly |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |

Phe Thr Phe Thr Glu Tyr Tyr Met Thr Trp Val Arg Gln Ala Pro Gly  
145 150 155 160

Lys Gly Leu Glu Trp Leu Ala Tyr Ile Ser Lys Asn Gly Glu Tyr Ser  
165 170 175

Lys Tyr Ser Pro Ser Ser Asn Gly Arg Phe Thr Ile Ser Arg Asp Asn  
180 185 190

Ala Lys Asn Ser Val Phe Leu Gln Leu Asp Arg Leu Ser Ala Asp Asp  
195 200 205

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

Glu Leu Leu Gln Tyr Ile Phe Asp Leu Trp Gly Gln Gly Ala Arg Val  
225 230 235 240

Thr Val Ser Ser Gly Gly Cys Gly Gly Gly Lys Val Ala Ala Leu Lys  
245 250 255

Glu Lys Val Ala Ala Leu Lys Glu Lys Val Ala Ala Leu Lys Glu Lys  
260 265 270

Val Ala Ala Leu Lys Glu  
275

<210> 16

<211> 834

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 16

|                                                                    |     |
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| caggctgtgg tgactcagga gccttcactg accgtgtccc caggcggaac tgtgaccctg  | 60  |
| acatgcagat ccagcacagg cgcagtgacc acatctaact acgccaattg ggtgcagcag  | 120 |
| aagccaggac aggcaccaag gggcctgac ggggggtacaa acaaaagggc tccttgacc   | 180 |
| cctgcacggt tttctggaag tctgctgggc ggaaaggccg ctctgactat taccggggca  | 240 |
| caggccgagg acgaagccga ttactattgt gctctgtggt atagcaatct gtgggtgttc  | 300 |
| gggggtggca caaaactgac tgtgctggga ggggggtggat ccggcggagg tggacaggtg | 360 |
| cagctggtgc agtctggggg aggcgttttc aagcctggag ggtccctgag actctcctgt  | 420 |
| gaagcctctg gattcacatt tactgaatat tacatgactt ggggccgcca ggctcctggg  | 480 |
| aaggggctgg agtggcttgc gtatattagt aagaatggtg aatattcaaa atattcaccg  | 540 |
| tcctcaaacg gccggttcac catctccaga gacaacgcca agaactcagt gtttctgcaa  | 600 |
| ttggacagac tgagcgccga cgacacggcc gtctattact gtgcgagagc ggacggatta  | 660 |
| acatacttct ctgaattact ccaatacatt tttgacctct ggggccaggg agcccgggtc  | 720 |

accgtctcct ccggaggatg tggcgggtgga aaagtggccg cactgaagga gaaagttgct 780  
gctttgaaag agaaggtcgc cgcacttaag gaaaaggtcg cagccctgaa agag 834

<210> 17  
<211> 276  
<212> PRT  
<213> Artificial sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 17  
Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly  
1 5 10 15

Glu Arg Ala Thr Leu Ser Cys Arg Ala Asn Arg Arg Ile Asp Met Asn  
20 25 30

Ala Leu Ala Trp Tyr Gln His Arg Ser Gly Gln Ala Pro Arg Leu Leu  
35 40 45

Thr His Gly Val Tyr Asn Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser  
50 55 60

Gly Tyr Trp Ser Gly Pro Glu Phe Thr Leu Val Ile Ser Arg Leu Glu  
65 70 75 80

Pro Glu Asp Phe Ala Val Tyr Tyr Cys Val His Phe Leu Tyr Glu Asn  
85 90 95

Pro Ala Trp Ala Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Gly Gly  
100 105 110

Gly Ser Gly Gly Gly Gly Glu Val Gln Leu Val Glu Ser Gly Gly Gly  
115 120 125

Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly  
130 135 140

Phe Thr Phe Ser Thr Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly  
145 150 155 160

Lys Gly Leu Glu Trp Val Gly Arg Ile Arg Ser Lys Tyr Asn Asn Tyr  
165 170 175

Ala Thr Tyr Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg  
180 185 190

Asp Asp Ser Lys Asn Ser Leu Tyr Leu Gln Met Asn Ser Leu Lys Thr  
195 200 205

Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn  
10

210

215

220

Ser Tyr Val Ser Trp Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr  
 225 230 235 240

Val Ser Ser Ala Ser Thr Lys Gly Glu Val Ala Ala Cys Glu Lys Glu  
 245 250 255

Val Ala Ala Leu Glu Lys Glu Val Ala Ala Leu Glu Lys Glu Val Ala  
 260 265 270

Ala Leu Glu Lys  
 275

&lt;210&gt; 18

&lt;211&gt; 828

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 18

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gaaattgtgt tgacgcagtc tccaggcacc ctgtccttgt ctccagggga gagagccacc      60
ctctcctgca gggccaatcg gcggattgac atgaacgcct tggcctggta ccagcaccga      120
tctggccagg ctcccaggct cctcacccat ggtgtctata acagggccac tggcatccca      180
gacagggttca gtggctattg gtctgggcca gagttcaccc tcgtcatcag cagactggag      240
cctgaagatt ttgcagtcta ttactgtgta cactttctct acgaaaatcc agcgtgggcg      300
ttcggccagg ggaccaagct ggagatcaag ggtggaggat ccggcggcgg aggcgagggtg      360
cagctgggtgg agtctggggg aggcttggtc cagcctggag ggtccctgag actctcctgt      420
gcagcctctg gattcacctt cagcacatac gctatgaatt ggggccgcca ggctccaggg      480
aaggggctgg agtgggttgg aaggatcagg tccaagtaca acaattatgc aacctactat      540
gccgactctg tgaagggtag attcaccatc tcaagagatg attcaaagaa ctcactgtat      600
ctgcaaataa acagcctgaa aaccgaggac acggccgtgt attactgtgt gagacacggt      660
aacttcggca attcttacgt gtcttggttt gcttattggg gacaggggac actggtgact      720
gtgtcttccg cctccaccaa gggcgaagtg gccgcatgtg agaaagaggt tgctgctttg      780
gagaaggagg tcgctgcact tgaaaaggag gtcgcagccc tggagaaa      828

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&lt;210&gt; 19

&lt;211&gt; 267

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 19

Gln Ala Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly  
 11

| 1               | 5                   | 10                  | 15                      |
|-----------------|---------------------|---------------------|-------------------------|
| Thr Val Thr     | Leu Thr Cys Arg Ser | Ser Thr Gly Ala Val | Thr Thr Ser             |
|                 | 20                  | 25                  | 30                      |
| Asn Tyr Ala     | Asn Trp Val Gln Gln | Lys Pro Gly Gln     | Ala Pro Arg Gly         |
|                 | 35                  | 40                  | 45                      |
| Leu Ile Gly Gly | Thr Asn Lys Arg Ala | Pro Trp Thr         | Pro Ala Arg Phe         |
|                 | 50                  | 55                  | 60                      |
| Ser Gly Ser Leu | Leu Gly Gly Lys Ala | Ala Leu Thr Ile     | Thr Gly Ala             |
|                 | 65                  | 70                  | 75                      |
| Gln Ala Glu Asp | Glu Ala Asp Tyr Tyr | Cys Ala Leu Trp     | Tyr Ser Asn             |
|                 | 85                  | 90                  | 95                      |
| Leu Trp Val Phe | Gly Gly Gly Thr     | Lys Leu Thr Val     | Leu Gly Gly Gly         |
|                 | 100                 | 105                 | 110                     |
| Gly Ser Gly     | Gly Gly Gly Glu     | Val Gln Leu Val     | Glu Ser Gly Gly Gly     |
|                 | 115                 | 120                 | 125                     |
| Val Val His Pro | Gly Gly Ser Leu     | Arg Leu Ser         | Cys Ala Ala Ser Gly     |
|                 | 130                 | 135                 | 140                     |
| Phe Ser Val Arg | Asn Asp Gln Met     | Ala Trp Val Arg     | Gln Ala Pro Gly         |
|                 | 145                 | 150                 | 155                     |
| Lys Arg Leu Glu | Trp Val Ser Ile     | Ile Asn Asp         | Gly Ala Ser Pro Tyr     |
|                 | 165                 | 170                 | 175                     |
| Tyr Ala Asp Ser | Val Lys Gly Arg     | Phe Ala Met         | Ser Arg Asp Thr Ser     |
|                 | 180                 | 185                 | 190                     |
| Lys Asn Thr Val | Phe Leu Gln Met     | Asn Ser Leu Arg     | Arg Asp Asp Thr         |
|                 | 195                 | 200                 | 205                     |
| Ala Val Tyr Phe | Cys Ala Arg Gly     | Ile Ala Ser         | Phe Phe Asp Val Trp     |
|                 | 210                 | 215                 | 220                     |
| Gly Arg Gly Thr | Leu Val Thr Val     | Ser Ser Ala         | Ser Thr Lys Gly Lys     |
|                 | 225                 | 230                 | 235                     |
| Val Ala Ala Cys | Lys Glu Lys Val     | Ala Ala             | Leu Lys Glu Lys Val Ala |
|                 | 245                 | 250                 | 255                     |
| Ala Leu Lys Glu | Lys Val Ala Ala     | Leu Lys Glu         |                         |
|                 | 260                 | 265                 |                         |

<210> 20  
<211> 801

<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 20  
caggctgtgg tgactcagga gccttcactg accgtgtccc caggcggaac tgtgaccctg 60  
acatgcagat ccagcacagg cgcagtgacc acatctaact acgccaattg ggtgcagcag 120  
aagccaggac aggcaccaag gggcctgac gggggtagaa aaaaaagggc tccctggacc 180  
cctgcacggg tttctggaag tctgctgggc ggaaaggccg ctctgactat taccggggca 240  
caggccgagg acgaagccga ttactattgt gctctgtggg atagcaatct gtgggtgttc 300  
gggggtggca caaaactgac tgtgctggga ggggtgggat ccggcggagg tggagagggtg 360  
cagctgggtg agtctggagg tggcgtgggc caccctggag gaagcctgag actctcctgt 420  
gcagcctctg gattcagcgt caggaacgac cagatggcct ggggccgcca ggctccaggg 480  
aagcgactgg agtgggtctc tattattaac gatgggtgcta gtccatacta cgcagactct 540  
gtgaagggcc gcttcgccat gtccagagac acctccaaga atacagtgtt tcttcagatg 600  
aacagcctga gacgtgacga cacagctgtt tatttctgtg cgagggggat cgcctcattc 660  
ttcgatgtct ggggccgtgg cagcgtgggc actgtctcgt cagcctccac caagggcaaa 720  
gtggccgcat gtaaggagaa agttgctgct ttgaaagaga aggtcgccgc acttaaggaa 780  
aaggtcgcag ccctgaaaga g 801

<210> 21  
<211> 276  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 21  
Glu Ile Val Leu Thr Gln Ser Pro Ala Ile Leu Ser Val Ser Pro Gly  
1 5 10 15  
Glu Thr Ala Thr Leu Ser Cys Arg Ala Ser Arg Arg Val Asp Met Asn  
20 25 30  
Gly Leu Ala Trp Tyr Gln His Arg Pro Gly Gln Ala Pro Arg Leu Leu  
35 40 45  
Met His Gly Val Tyr Asn Arg Ala Ala Gly Ile Ser Gly Arg Phe Thr  
50 55 60  
Gly Ser Trp Ser Gly Pro Val Phe Thr Leu Thr Ile Ser Arg Leu Glu  
65 70 75 80  
Pro Glu Asp Phe Gly Val Tyr Tyr Cys Gln His Phe Tyr Tyr Glu Thr  
85 90 95

Ser Ala Trp Ala Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys Gly Gly  
100 105 110

Gly Ser Gly Gly Gly Gly Glu Val Gln Leu Val Glu Ser Gly Gly Gly  
115 120 125

Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly  
130 135 140

Phe Thr Phe Ser Thr Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly  
145 150 155 160

Lys Gly Leu Glu Trp Val Gly Arg Ile Arg Ser Lys Tyr Asn Asn Tyr  
165 170 175

Ala Thr Tyr Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg  
180 185 190

Asp Asp Ser Lys Asn Ser Leu Tyr Leu Gln Met Asn Ser Leu Lys Thr  
195 200 205

Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn  
210 215 220

Ser Tyr Val Ser Trp Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr  
225 230 235 240

Val Ser Ser Ala Ser Thr Lys Gly Glu Val Ala Ala Cys Glu Lys Glu  
245 250 255

Val Ala Ala Leu Glu Lys Glu Val Ala Ala Leu Glu Lys Glu Val Ala  
260 265 270

Ala Leu Glu Lys  
275

<210> 22  
<211> 828  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 22  
gaaattgtgt tgacgcagtc tccagccatc ctgtctgtgt ctccagggga aaccgccacc 60  
ctctcctgca gggccagtcg ccgtgttgac atgaacggcc tcgcctggta ccaacacagg 120  
cctggccagg ctcccaggct cctcatgcat ggtgtttata atagggccgc cggcatctca 180  
ggcaggttca ctggcagttg gtctgggcca gtcttcactc tcaccatcag cagactggag 240  
cctgaagatt ttggagtcta ttactgtcaa cacttttact atgagacttc agcgtgggcg 300

|                                                                     |     |
|---------------------------------------------------------------------|-----|
| ttcggccagg ggaccaggct ggagatcaaa ggtggaggat ccggcggcgg aggcgaggtg   | 360 |
| cagctgggtgg agtctggggg aggccttggtc cagcctggag ggtccctgag actctcctgt | 420 |
| gcagcctctg gattcacctt cagcacatac gctatgaatt ggggtccgcca ggctccaggg  | 480 |
| aaggggctgg agtggggttg aaggatcagg tccaagtaca acaattatgc aacctactat   | 540 |
| gccgactctg tgaagggtag attcaccatc tcaagagatg attcaaagaa ctactgtat    | 600 |
| ctgcaaatac acagcctgaa aaccgaggac acggccgtgt attactgtgt gagacacggt   | 660 |
| aacttcggca attcttacgt gtcttggttt gcttattggg gacaggggac actggtgact   | 720 |
| gtgtcttccg cctccaccaa gggcgaagtg gccgcatgtg agaaagaggt tgctgctttg   | 780 |
| gagaaggagg tcgctgcact tgaaaaggag gtcgcagccc tggagaaa                | 828 |

<210> 23

<211> 268

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 23

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

Thr Val Thr Leu Thr Cys Arg Ser Ser Thr Gly Ala Val Thr Thr Ser  
20 25 30

Asn Tyr Ala Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly  
35 40 45

Leu Ile Gly Gly Thr Asn Lys Arg Ala Pro Trp Thr Pro Ala Arg Phe  
50 55 60

Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Ile Thr Gly Ala  
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn  
85 90 95

Leu Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly  
100 105 110

Gly Ser Gly Gly Gly Gly Glu Val Gln Leu Val Glu Ser Gly Gly Gly  
115 120 125

Val Val His Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly  
130 135 140

Phe Ser Val Ser His Asp Phe Met Ala Trp Ile Arg Gln Ala Pro Gly  
145 150 155 160

Lys Gly Leu Glu Trp Ile Ser Ile Ile Tyr Asn Thr Gly Ser Arg Tyr  
165 170 175

Tyr Tyr Ala Asp Ser Val Lys Gly Arg Phe Ala Leu Ser Arg Asp Thr  
180 185 190

Ser Asn Asn Thr Leu Ile Leu His Met Ser Gly Leu Arg Arg Asp Asp  
195 200 205

Thr Ala Ile Tyr Phe Cys Ala Arg Gly Val Ala Ser Phe Phe Glu Leu  
210 215 220

Trp Gly Arg Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly  
225 230 235 240

Lys Val Ala Ala Cys Lys Glu Lys Val Ala Ala Leu Lys Glu Lys Val  
245 250 255

Ala Ala Leu Lys Glu Lys Val Ala Ala Leu Lys Glu  
260 265

<210> 24  
<211> 804  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 24  
caggctgtgg tgactcagga gccttcactg accgtgtccc caggcggaac tgtgaccctg 60  
acatgcagat ccagcacagg cgcagtgacc acatctaact acgccaattg ggtgcagcag 120  
aagccaggac aggcaccaag gggcctgatc ggggggtacaa acaaaagggc tccctggacc 180  
cctgcacggt tttctggaag tctgctgggc ggaaaggccg ctctgactat taccggggca 240  
caggccgagg acgaagccga ttactattgt gctctgtggt atagcaatct gtgggtgttc 300  
gggggtggca caaaactgac tgtgctggga ggggggtggat ccggcggagg tggagagggtg 360  
cagctgggtgg agtctggagg tggcgtggtc caccctggag gaagcctgag actctcctgt 420  
gcagcctctg gattcagcgt cagtcacgac ttcattggcct ggatcaggca ggctccagga 480  
aagggactgg agtggatctc tatcatatat aacactgggt ctcgatacta ctacgcagac 540  
tctgtgaagg gccgcttcgc cctctccaga gatactcca acaacacact gattcttcac 600  
atgagcggcc tgagacgtga cgacacggct atttatttct gtgccagggg agtcgcctcg 660  
ttctttgaat tgtggggccg tggcaccctg gtcactgtct cgtcagcctc caccaagggc 720  
aaagtggccg catgtaagga gaaagttgct gctttgaaag agaaggtcgc cgcacttaag 780  
gaaaaggctg cagccctgaa agag 804

<210> 25

<211> 273  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 25  
Asp Ile Val Met Thr Gln Ser Pro Asp Ser Leu Ala Val Ser Pro Gly  
1 5 10 15  
  
Glu Arg Ala Thr Ile His Cys Lys Ser Ser Gln Thr Leu Leu Tyr Ser  
20 25 30  
  
Ser Asn Asn Arg His Ser Ile Ala Trp Tyr Gln Gln Arg Pro Gly Gln  
35 40 45  
  
Pro Pro Lys Leu Leu Leu Tyr Trp Ala Ser Met Arg Leu Ser Gly Val  
50 55 60  
  
Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
65 70 75 80  
  
Ile Asn Asn Leu Gln Ala Glu Asp Val Ala Ile Tyr Tyr Cys His Gln  
85 90 95  
  
Tyr Ser Ser His Pro Pro Thr Phe Gly His Gly Thr Arg Val Glu Ile  
100 105 110  
  
Lys Gly Gly Gly Ser Gly Gly Gly Gly Gln Val Thr Leu Arg Glu Ser  
115 120 125  
  
Gly Pro Ala Leu Val Lys Pro Thr Gln Thr Leu Thr Leu Thr Cys Thr  
130 135 140  
  
Phe Ser Gly Phe Ser Leu Ser Thr Ser Gly Met Gly Val Gly Trp Ile  
145 150 155 160  
  
Arg Gln Pro Pro Gly Lys Ala Leu Glu Trp Leu Ala His Ile Trp Trp  
165 170 175  
  
Asp Asp Asp Lys Arg Tyr Asn Pro Ala Leu Lys Ser Arg Leu Thr Ile  
180 185 190  
  
Ser Lys Asp Thr Ser Lys Asn Gln Val Val Leu Thr Met Thr Asn Met  
195 200 205  
  
Asp Pro Val Asp Thr Ala Thr Tyr Tyr Cys Ala Gln Ile Asn Pro Ala  
210 215 220  
  
Trp Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly  
225 230 235 240

Gly Cys Gly Gly Gly Glu Val Ala Ala Leu Glu Lys Glu Val Ala Ala  
245 250 255

Leu Glu Lys Glu Val Ala Ala Leu Glu Lys Glu Val Ala Ala Leu Glu  
260 265 270

Lys

<210> 26  
<211> 819  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 26  
gacatcgtga tgaccagtc tccagactcc ctggctgtgt ctccgggcga gagggccacc 60  
atccactgca agtccagcca gactcttttg tacagctcca acaatagaca ctccattgct 120  
tggtagccaac agagaccagg acagcctcct aaattactcc tttattgggc atctatgcgg 180  
ctttccggggg tccctgaccg attcagtggc agcgggtctg ggacagattt cactctcacc 240  
atcaacaacc tgcaggctga ggatgtggcc atctattact gtcaccaata ttccagtcac 300  
cccccgacgt tcggccacgg gaccaggggtg gagatcaaag gtggaggatc cggcggcgga 360  
ggccagggtta ccctgagaga gtctggccct gcgctgggtga agccacaca gaccctcaca 420  
ctgacttgta ccttctctgg gttttcactg agcacttctg gtatgggtgt aggctggatt 480  
cgtcagcctc ccgggaaggc tctagagtgg ctggcacaca tttggtggga tgatgacaag 540  
cgctataatc cagccctgaa gagccgactg acaatctcca aggatacctc caaaaaccag 600  
gtagtcctca caatgaccaa catggaccct gtggatactg ccacatacta ctgtgctcaa 660  
ataaaccctg cctggtttgc ttactggggc caagggactc tggtcactgt gagctccgga 720  
ggatgtggcg gtggagaagt ggccgcactg gagaaagagg ttgctgcttt ggagaaggag 780  
gtcgtgcac ttgaaaagga ggtcgagcc ctggagaaa 819

<210> 27  
<211> 279  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 27  
Asp Ile Val Met Thr Gln Ser Pro Asp Ser Leu Ala Val Ser Leu Gly  
1 5 10 15

Glu Arg Ala Thr Ile Asn Cys Lys Ala Ser Gln Ser Val Asp Phe Asp  
20 25 30

Gly Asp Ser Phe Met Asn Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro  
35 40 45

Lys Leu Leu Ile Tyr Thr Thr Ser Asn Leu Glu Ser Gly Val Pro Asp  
50 55 60

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser  
65 70 75 80

Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln Ser Asn  
85 90 95

Glu Asp Pro Tyr Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Gly  
100 105 110

Gly Gly Ser Gly Gly Gly Gly Gln Val Gln Leu Val Gln Ser Gly Gly  
115 120 125

Gly Val Phe Lys Pro Gly Gly Ser Leu Arg Leu Ser Cys Glu Ala Ser  
130 135 140

Gly Phe Thr Phe Thr Glu Tyr Tyr Met Thr Trp Val Arg Gln Ala Pro  
145 150 155 160

Gly Lys Gly Leu Glu Trp Leu Ala Tyr Ile Ser Lys Asn Gly Glu Tyr  
165 170 175

Ser Lys Tyr Ser Pro Ser Ser Asn Gly Arg Phe Thr Ile Ser Arg Asp  
180 185 190

Asn Ala Lys Asn Ser Val Phe Leu Gln Leu Asp Arg Leu Ser Ala Asp  
195 200 205

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

Ser Glu Leu Leu Gln Tyr Ile Phe Asp Leu Trp Gly Gln Gly Ala Arg  
225 230 235 240

Val Thr Val Ser Ser Gly Gly Cys Gly Gly Gly Lys Val Ala Ala Leu  
245 250 255

Lys Glu Lys Val Ala Ala Leu Lys Glu Lys Val Ala Ala Leu Lys Glu  
260 265 270

Lys Val Ala Ala Leu Lys Glu  
275

<210> 28

<211> 837

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 28

```
gacatcgtga tgaccaatc tccagactct ttggctgtgt ctctagggga gagggccacc      60
atcaactgca aggccagcca aagtgttgat ttgatggtg atagttttat gaactggtac      120
caacagaaac caggacagcc acccaaactc ctcatctata ctacatccaa tctagaatct      180
gggggtcccag acaggttttag tggcagtggg tctgggacag acttcaccct caccatcagc      240
agcctgcagg ctgaggatgt ggcagtttat tactgtcagc aaagtaatga agatccgtac      300
acgttcggac aggggaccaa gcttgagatc aaaggaggcg gatccggcgg aggtggacag      360
gtgcagctgg tgcagtctgg gggaggcggt ttcaagcctg gagggtcctt gagactctcc      420
tgtgaagcct ctggattcac atttactgaa tattacatga cttgggtccg ccaggctcct      480
gggaaggggc tggagtggct tgcgtatatatt agtaagaatg gtgaatattc aaaatattca      540
ccgtcctcaa acggccgggt caccatctcc agagacaacg ccaagaactc agtgtttctg      600
caattggaca gactgagcgc cgacgacacg gccgtctatt actgtgagag agcggacgga      660
ttaacatact tctctgaatt actccaatac atttttgacc tctggggcca gggagcccgg      720
gtcaccgtct cctccggagg atgtggcggg ggaaaagtgg ccgcactgaa ggagaaagtt      780
gctgctttga aagagaaggt cgccgcactt aaggaaaagg tcgcagccct gaaagag      837
```

<210> 29

<211> 270

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 29

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

```
Thr Val Thr Leu Thr Cys Arg Ser Ser Thr Gly Ala Val Thr Thr Ser
          20          25          30
```

```
Asn Tyr Ala Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly
35          40          45
```

```
Leu Ile Gly Gly Thr Asn Lys Arg Ala Pro Trp Thr Pro Ala Arg Phe
50          55          60
```

```
Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Ile Thr Gly Ala
65          70          75          80
```

```
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn
85          90          95
```

```
Leu Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly
20
```

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |     |     |     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|-----|
| 100                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 105 | 110 |     |
| Gly Ser Gly Gly Gly Gly Glu Val Lys Leu Asp Glu Thr Gly Gly Gly                                                                                                                                                                                                                                                                                                                                                                                                                                          | 115 | 120 | 125 |
| Leu Val Gln Pro Gly Arg Pro Met Lys Leu Ser Cys Val Ala Ser Gly                                                                                                                                                                                                                                                                                                                                                                                                                                          | 130 | 135 | 140 |
| Phe Thr Phe Ser Asp Tyr Trp Met Asn Trp Val Arg Gln Ser Pro Glu                                                                                                                                                                                                                                                                                                                                                                                                                                          | 145 | 150 | 155 |
| Lys Gly Leu Glu Trp Val Ala Gln Ile Arg Asn Lys Pro Tyr Asn Tyr                                                                                                                                                                                                                                                                                                                                                                                                                                          | 160 | 165 | 170 |
| Glu Thr Tyr Tyr Ser Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg                                                                                                                                                                                                                                                                                                                                                                                                                                          | 175 | 180 | 185 |
| Asp Asp Ser Lys Ser Ser Val Tyr Leu Gln Met Asn Asn Leu Arg Val                                                                                                                                                                                                                                                                                                                                                                                                                                          | 190 | 195 | 200 |
| Glu Asp Met Gly Ile Tyr Tyr Cys Thr Gly Ser Tyr Tyr Gly Met Asp                                                                                                                                                                                                                                                                                                                                                                                                                                          | 205 | 210 | 215 |
| Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser Gly Gly Cys Gly                                                                                                                                                                                                                                                                                                                                                                                                                                          | 220 | 225 | 230 |
| Gly Gly Glu Val Ala Ala Leu Glu Lys Glu Val Ala Ala Leu Glu Lys                                                                                                                                                                                                                                                                                                                                                                                                                                          | 235 | 240 | 245 |
| Glu Val Ala Ala Leu Glu Lys Glu Val Ala Ala Leu Glu Lys                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 250 | 255 | 260 |
| <210> 30<br><211> 277<br><212> PRT<br><213> Artificial Sequence<br><br><220><br><223> Description of Artificial Sequence: Synthetic polypeptide<br><br><400> 30<br>Asp Val Val Met Thr Gln Thr Pro Phe Ser Leu Pro Val Ser Leu Gly<br>1 5 10 15<br><br>Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val His Ser<br>20 25 30<br><br>Asn Gly Asn Thr Tyr Leu Arg Trp Tyr Leu Gln Lys Pro Gly Gln Ser<br>35 40 45<br><br>Pro Lys Val Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro<br>50 55 60 |     |     |     |

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile  
 65 70 75 80  
 Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Phe Cys Ser Gln Ser  
 85 90 95  
 Thr His Val Pro Trp Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys  
 100 105 110  
 Gly Gly Gly Ser Gly Gly Gly Gly Gln Val Gln Leu Gln Glu Ser Gly  
 115 120 125  
 Pro Gly Leu Val Lys Pro Ser Gln Thr Leu Ser Leu Ser Cys Thr Val  
 130 135 140  
 Ser Gly Gly Ser Ser Ser Ser Gly Ala His Tyr Trp Ser Trp Ile Arg  
 145 150 155 160  
 Gln Tyr Pro Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile His Tyr Ser  
 165 170 175  
 Gly Asn Thr Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Ile Thr Ile Ser  
 180 185 190  
 Gln His Thr Ser Glu Asn Gln Phe Ser Leu Lys Leu Asn Ser Val Thr  
 195 200 205  
 Val Ala Asp Thr Ala Val Tyr Tyr Cys Ala Arg Gly Thr Arg Leu Arg  
 210 215 220  
 Thr Leu Arg Asn Ala Phe Asp Ile Trp Gly Gln Gly Thr Leu Val Thr  
 225 230 235 240  
 Val Ser Ser Gly Gly Cys Gly Gly Gly Lys Val Ala Ala Leu Lys Glu  
 245 250 255  
 Lys Val Ala Ala Leu Lys Glu Lys Val Ala Ala Leu Lys Glu Lys Val  
 260 265 270  
 Ala Ala Leu Lys Glu  
 275

<210> 31  
 <211> 272  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 31  
 Asp Val Val Met Thr Gln Thr Pro Phe Ser Leu Pro Val Ser Leu Gly  
 1 5 10 15

Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val His Ser  
 20 30  
 Asn Gly Asn Thr Tyr Leu Arg Trp Tyr Leu Gln Lys Pro Gly Gln Ser  
 35 40 45  
 Pro Lys Val Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro  
 50 55 60  
 Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile  
 65 70 75 80  
 Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Phe Cys Ser Gln Ser  
 85 90 95  
 Thr His Val Pro Trp Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys  
 100 105 110  
 Gly Gly Gly Ser Gly Gly Gly Gly Gln Val Thr Leu Arg Glu Ser Gly  
 115 120 125  
 Pro Ala Leu Val Lys Pro Thr Gln Thr Leu Thr Leu Thr Cys Thr Phe  
 130 135 140  
 Ser Gly Phe Ser Leu Ser Thr Ser Gly Met Gly Val Gly Trp Ile Arg  
 145 150 155 160  
 Gln Pro Pro Gly Lys Ala Leu Glu Trp Leu Ala His Ile Trp Trp Asp  
 165 170 175  
 Asp Asp Lys Arg Tyr Asn Pro Ala Leu Lys Ser Arg Leu Thr Ile Ser  
 180 185 190  
 Lys Asp Thr Ser Lys Asn Gln Val Val Leu Thr Met Thr Asn Met Asp  
 195 200 205  
 Pro Val Asp Thr Ala Thr Tyr Tyr Cys Ala Gln Ile Asn Pro Ala Trp  
 210 215 220  
 Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly  
 225 230 235 240  
 Cys Gly Gly Gly Glu Val Ala Ala Leu Glu Lys Glu Val Ala Ala Leu  
 245 250 255  
 Glu Lys Glu Val Ala Ala Leu Glu Lys Glu Val Ala Ala Leu Glu Lys  
 260 265 270

<210> 32  
 <211> 271  
 <212> PRT  
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 32

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

Glu Arg Ala Thr Ile Asn Cys Lys Ala Ser Gln Ser Val Asp Phe Asp  
20 25 30

Gly Asp Ser Phe Met Asn Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro  
35 40 45

Lys Leu Leu Ile Tyr Thr Thr Ser Asn Leu Glu Ser Gly Val Pro Asp  
50 55 60

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser  
65 70 75 80

Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln Ser Asn  
85 90 95

Glu Asp Pro Tyr Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Gly  
100 105 110

Gly Gly Ser Gly Gly Gly Gly Glu Val Lys Leu Asp Glu Thr Gly Gly  
115 120 125

Gly Leu Val Gln Pro Gly Arg Pro Met Lys Leu Ser Cys Val Ala Ser  
130 135 140

Gly Phe Thr Phe Ser Asp Tyr Trp Met Asn Trp Val Arg Gln Ser Pro  
145 150 155 160

Glu Lys Gly Leu Glu Trp Val Ala Gln Ile Arg Asn Lys Pro Tyr Asn  
165 170 175

Tyr Glu Thr Tyr Tyr Ser Asp Ser Val Lys Gly Arg Phe Thr Ile Ser  
180 185 190

Arg Asp Asp Ser Lys Ser Ser Val Tyr Leu Gln Met Asn Asn Leu Arg  
195 200 205

Val Glu Asp Met Gly Ile Tyr Tyr Cys Thr Gly Ser Tyr Tyr Gly Met  
210 215 220

Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser Gly Gly Cys  
225 230 235 240

Gly Gly Gly Lys Val Ala Ala Leu Lys Glu Lys Val Ala Ala Leu Lys  
245 250 255

Glu Lys Val Ala Ala Leu Lys Glu Lys Val Ala Ala Leu Lys Glu  
260 265 270

<210> 33

<211> 273

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
polypeptide

<400> 33

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

Glu Arg Ala Thr Ile His Cys Lys Ser Ser Gln Thr Leu Leu Tyr Ser  
20 25 30

Ser Asn Asn Arg His Ser Ile Ala Trp Tyr Gln Gln Arg Pro Gly Gln  
35 40 45

Pro Pro Lys Leu Leu Leu Tyr Trp Ala Ser Met Arg Leu Ser Gly Val  
50 55 60

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
65 70 75 80

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

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

Lys Gly Gly Gly Ser Gly Gly Gly Gly Glu Val Lys Leu Asp Glu Thr  
115 120 125

Gly Gly Gly Leu Val Gln Pro Gly Arg Pro Met Lys Leu Ser Cys Val  
130 135 140

Ala Ser Gly Phe Thr Phe Ser Asp Tyr Trp Met Asn Trp Val Arg Gln  
145 150 155 160

Ser Pro Glu Lys Gly Leu Glu Trp Val Ala Gln Ile Arg Asn Lys Pro  
165 170 175

Tyr Asn Tyr Glu Thr Tyr Tyr Ser Asp Ser Val Lys Gly Arg Phe Thr  
180 185 190

Ile Ser Arg Asp Asp Ser Lys Ser Ser Val Tyr Leu Gln Met Asn Asn  
195 200 205

Leu Arg Val Glu Asp Met Gly Ile Tyr Tyr Cys Thr Gly Ser Tyr Tyr  
210 215 220

Gly Met Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser Gly  
225 230 235 240

Gly Cys Gly Gly Gly Glu Val Ala Ala Leu Glu Lys Glu Val Ala Ala  
245 250 255

Leu Glu Lys Glu Val Ala Ala Leu Glu Lys Glu Val Ala Ala Leu Glu  
260 265 270

Lys

<210> 34

<211> 280

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
polypeptide

<400> 34

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

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

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

Pro Lys Val Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro  
50 55 60

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

Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Phe Cys Ser Gln Ser  
85 90 95

Thr His Val Pro Trp Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys  
100 105 110

Gly Gly Gly Ser Gly Gly Gly Gly Gln Val Gln Leu Val Gln Ser Gly  
115 120 125

Gly Gly Val Phe Lys Pro Gly Gly Ser Leu Arg Leu Ser Cys Glu Ala  
130 135 140

Ser Gly Phe Thr Phe Thr Glu Tyr Tyr Met Thr Trp Val Arg Gln Ala  
145 150 155 160

Pro Gly Lys Gly Leu Glu Trp Leu Ala Tyr Ile Ser Lys Asn Gly Glu  
26



Gly Ser Gly Gly Gly Gly Glu Val Lys Leu Asp Glu Thr Gly Gly Gly  
115 120 125

Leu Val Gln Pro Gly Arg Pro Met Lys Leu Ser Cys Val Ala Ser Gly  
130 135 140

Phe Thr Phe Ser Asp Tyr Trp Met Asn Trp Val Arg Gln Ser Pro Glu  
145 150 155 160

Lys Gly Leu Glu Trp Val Ala Gln Ile Arg Asn Lys Pro Tyr Asn Tyr  
165 170 175

Glu Thr Tyr Tyr Ser Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg  
180 185 190

Asp Asp Ser Lys Ser Ser Val Tyr Leu Gln Met Asn Asn Leu Arg Val  
195 200 205

Glu Asp Met Gly Ile Tyr Tyr Cys Thr Gly Ser Tyr Tyr Gly Met Asp  
210 215 220

Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser Gly Gly Cys Gly  
225 230 235 240

Gly Gly Glu Val Ala Ala Leu Glu Lys Glu Val Ala Ala Leu Glu Lys  
245 250 255

Glu Val Ala Ala Leu Glu Lys Glu Val Ala Ala Leu Glu Lys  
260 265 270

<210> 36

<211> 277

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 36

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

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

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

Pro Lys Val Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro  
50 55 60

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

Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Phe Cys Ser Gln Ser  
85 90 95

Thr His Val Pro Trp Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys  
100 105 110

Gly Gly Gly Ser Gly Gly Gly Gly Gln Val Gln Leu Gln Glu Ser Gly  
115 120 125

Pro Gly Leu Val Lys Pro Ser Gln Thr Leu Ser Leu Ser Cys Thr Val  
130 135 140

Ser Gly Gly Ser Ser Ser Ser Gly Ala His Tyr Trp Ser Trp Ile Arg  
145 150 155 160

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

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

Gln His Thr Ser Glu Asn Gln Phe Ser Leu Lys Leu Asn Ser Val Thr  
195 200 205

Val Ala Asp Thr Ala Val Tyr Tyr Cys Ala Arg Gly Thr Arg Leu Arg  
210 215 220

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

Val Ser Ser Gly Gly Cys Gly Gly Gly Lys Val Ala Ala Leu Lys Glu  
245 250 255

Lys Val Ala Ala Leu Lys Glu Lys Val Ala Ala Leu Lys Glu Lys Val  
260 265 270

Ala Ala Leu Lys Glu  
275

<210> 37

<211> 272

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
polypeptide

<400> 37

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

Thr Val Thr Leu Thr Cys Arg Ser Ser Thr Gly Ala Val Thr Thr Ser  
20 25 30

Asn Tyr Ala Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly  
35 40 45

Leu Ile Gly Gly Thr Asn Lys Arg Ala Pro Trp Thr Pro Ala Arg Phe  
50 55 60

Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Ile Thr Gly Ala  
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn  
85 90 95

Leu Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly  
100 105 110

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

Leu Val Lys Pro Thr Gln Thr Leu Thr Leu Thr Cys Thr Phe Ser Gly  
130 135 140

Phe Ser Leu Ser Thr Ser Gly Met Ser Val Gly Trp Ile Arg Gln Pro  
145 150 155 160

Pro Gly Lys Ala Leu Glu Trp Leu Ala Asp Ile Trp Trp Asp Asp Lys  
165 170 175

Lys Asp Tyr Asn Pro Ser Leu Lys Ser Arg Leu Thr Ile Ser Lys Asp  
180 185 190

Thr Ser Lys Asn Gln Val Val Leu Lys Val Thr Asn Met Asp Pro Ala  
195 200 205

Asp Thr Ala Thr Tyr Tyr Cys Ala Arg Ser Met Ile Thr Asn Trp Tyr  
210 215 220

Phe Asp Val Trp Gly Ala Gly Thr Thr Val Thr Val Ser Ser Gly Gly  
225 230 235 240

Cys Gly Gly Gly Glu Val Ala Ala Leu Glu Lys Glu Val Ala Ala Leu  
245 250 255

Glu Lys Glu Val Ala Ala Leu Glu Lys Glu Val Ala Ala Leu Glu Lys  
260 265 270

<210> 38

<211> 273

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

polypeptide

<400> 38

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

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

His Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr  
35 40 45

Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly Ser  
50 55 60

Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Asp  
65 70 75 80

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

Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Gly Gly Gly Ser Gly Gly  
100 105 110

Gly Gly Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro  
115 120 125

Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser  
130 135 140

Thr Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu  
145 150 155 160

Trp Val Gly Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr  
165 170 175

Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys  
180 185 190

Asn Ser Leu Tyr Leu Gln Met Asn Ser Leu Lys Thr Glu Asp Thr Ala  
195 200 205

Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Val Ser  
210 215 220

Trp Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly  
225 230 235 240

Gly Cys Gly Gly Gly Lys Val Ala Ala Leu Lys Glu Lys Val Ala Ala  
245 250 255

Leu Lys Glu Lys Val Ala Ala Leu Lys Glu Lys Val Ala Ala Leu Lys  
260 265 270

Glu

<210> 39  
<211> 5  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<400> 39  
Ala Pro Ser Ser Ser  
1 5

<210> 40  
<211> 8  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<400> 40  
Ala Pro Ser Ser Ser Pro Met Glu  
1 5

<210> 41  
<211> 217  
<212> PRT  
<213> Homo sapiens

<400> 41  
Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys  
1 5 10 15

Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val  
20 25 30

Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr  
35 40 45

Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu  
50 55 60

Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His  
65 70 75 80

Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys  
85 90 95

Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln  
100 105 110

Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met  
32

115                      120                      125  
 Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro  
     130                      135                      140  
 Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn  
     145                      150                      155                      160  
 Tyr Lys Thr Thr Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu  
                                  165                      170                      175  
 Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val  
                                  180                      185                      190  
 Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln  
                                  195                      200                      205  
 Lys Ser Leu Ser Leu Ser Pro Gly Lys  
     210                      215  
 <210> 42  
 <211> 217  
 <212> PRT  
 <213> Artificial Sequence  
 <220>  
 <223> Description of Artificial Sequence: Synthetic  
                                  polypeptide  
 <400> 42  
 Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys  
   1                                  5                                  10                                  15  
 Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val  
                                   20                                  25                                  30  
 Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr  
                                   35                                  40                                  45  
 Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu  
                                   50                                  55                                  60  
 Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His  
   65                                  70                                  75                                  80  
 Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys  
                                   85                                  90                                  95  
 Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln  
                                   100                                  105                                  110  
 Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met  
                                   115                                  120                                  125

Thr Lys Asn Gln Val Ser Leu Trp Cys Leu Val Lys Gly Phe Tyr Pro  
130 135 140

Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn  
145 150 155 160

Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu  
165 170 175

Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val  
180 185 190

Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln  
195 200 205

Lys Ser Leu Ser Leu Ser Pro Gly Lys  
210 215

<210> 43  
<211> 217  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 43  
Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys  
1 5 10 15

Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val  
20 25 30

Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr  
35 40 45

Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu  
50 55 60

Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His  
65 70 75 80

Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys  
85 90 95

Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln  
100 105 110

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

Thr Lys Asn Gln Val Ser Leu Ser Cys Ala Val Lys Gly Phe Tyr Pro  
130 135 140

Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn  
145 150 155 160

Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu  
165 170 175

Val Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val  
180 185 190

Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn Arg Tyr Thr Gln  
195 200 205

Lys Ser Leu Ser Leu Ser Pro Gly Lys  
210 215

<210> 44

<211> 271

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 44

Ser Gln Ser Ala Leu Thr Gln Pro Pro Ser Ala Ser Gly Ser Pro Gly  
1 5 10 15

Gln Ser Val Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Gly  
20 25 30

Tyr Asn Tyr Val Ser Trp Tyr Gln His His Pro Gly Lys Ala Pro Lys  
35 40 45

Leu Ile Ile Ser Glu Val Asn Asn Arg Pro Ser Gly Val Pro Asp Arg  
50 55 60

Phe Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly  
65 70 75 80

Leu Gln Ala Glu Asp Glu Ala Glu Tyr Tyr Cys Ser Ser Tyr Thr Asp  
85 90 95

Ile His Asn Phe Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly  
100 105 110

Gly Gly Ser Gly Gly Gly Gly Gln Val Thr Leu Arg Glu Ser Gly Pro  
115 120 125

Ala Leu Val Lys Pro Thr Gln Thr Leu Thr Leu Thr Cys Thr Phe Ser  
130 135 140

Gly Phe Ser Leu Ser Thr Ser Gly Met Gly Val Gly Trp Ile Arg Gln  
145 150 155 160  
35

Pro Pro Gly Lys Ala Leu Glu Trp Leu Ala His Ile Trp Trp Asp Asp  
165 170 175

Asp Lys Arg Tyr Asn Pro Ala Leu Lys Ser Arg Leu Thr Ile Ser Lys  
180 185 190

Asp Thr Ser Lys Asn Gln Val Val Leu Thr Met Thr Asn Met Asp Pro  
195 200 205

Val Asp Thr Ala Thr Tyr Tyr Cys Ala Gln Ile Asn Pro Ala Trp Phe  
210 215 220

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Cys  
225 230 235 240

Gly Gly Gly Glu Val Ala Ala Leu Glu Lys Glu Val Ala Ala Leu Glu  
245 250 255

Lys Glu Val Ala Ala Leu Glu Lys Glu Val Ala Ala Leu Glu Lys  
260 265 270

<210> 45

<211> 276

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 45

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

Glu Arg Ala Thr Ile Asn Cys Lys Ala Ser Gln Ser Val Asp Phe Asp  
20 25 30

Gly Asp Ser Phe Met Asn Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro  
35 40 45

Lys Leu Leu Ile Tyr Thr Thr Ser Asn Leu Glu Ser Gly Val Pro Asp  
50 55 60

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser  
65 70 75 80

Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln Ser Asn  
85 90 95

Glu Asp Pro Tyr Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Gly  
100 105 110

Gly Gly Ser Gly Gly Gly Gly Gln Val Gln Leu Gln Glu Ser Gly Pro  
36

115                                      120                                      125  
 Gly Leu Val Lys Pro Ser Gln Thr Leu Ser Leu Ser Cys Thr Val Ser  
 130                                      135                                      140  
 Gly Gly Ser Ser Ser Ser Gly Ala His Tyr Trp Ser Trp Ile Arg Gln  
 145                                      150                                      155  
 Tyr Pro Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile His Tyr Ser Gly  
 165                                      170                                      175  
 Asn Thr Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Ile Thr Ile Ser Gln  
 180                                      185                                      190  
 His Thr Ser Glu Asn Gln Phe Ser Leu Lys Leu Asn Ser Val Thr Val  
 195                                      200                                      205  
 Ala Asp Thr Ala Val Tyr Tyr Cys Ala Arg Gly Thr Arg Leu Arg Thr  
 210                                      215                                      220  
 Leu Arg Asn Ala Phe Asp Ile Trp Gly Gln Gly Thr Leu Val Thr Val  
 225                                      230                                      235  
 Ser Ser Gly Gly Cys Gly Gly Gly Lys Val Ala Ala Leu Lys Glu Lys  
 245                                      250                                      255  
 Val Ala Ala Leu Lys Glu Lys Val Ala Ala Leu Lys Glu Lys Val Ala  
 260                                      265                                      270  
 Ala Leu Lys Glu  
 275

<210> 46  
 <211> 510  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 46  
 Asp Ile Val Met Thr Gln Ser Pro Asp Ser Leu Ala Val Ser Pro Gly  
 1                                      5                                      10                                      15  
 Glu Arg Ala Thr Ile His Cys Lys Ser Ser Gln Thr Leu Leu Tyr Ser  
 20                                      25                                      30  
 Ser Asn Asn Arg His Ser Ile Ala Trp Tyr Gln Gln Arg Pro Gly Gln  
 35                                      40                                      45  
 Pro Pro Lys Leu Leu Leu Tyr Trp Ala Ser Met Arg Leu Ser Gly Val  
 50                                      55                                      60

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
 65 70 75 80  
 Ile Asn Asn Leu Gln Ala Glu Asp Val Ala Ile Tyr Tyr Cys His Gln  
 85 90 95  
 Tyr Ser Ser His Pro Pro Thr Phe Gly His Gly Thr Arg Val Glu Ile  
 100 105 110  
 Lys Gly Gly Gly Ser Gly Gly Gly Gly Glu Val Gln Leu Val Glu Ser  
 115 120 125  
 Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala  
 130 135 140  
 Ala Ser Gly Phe Thr Phe Ser Thr Tyr Ala Met Asn Trp Val Arg Gln  
 145 150 155 160  
 Ala Pro Gly Lys Gly Leu Glu Trp Val Gly Arg Ile Arg Ser Lys Tyr  
 165 170 175  
 Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr  
 180 185 190  
 Ile Ser Arg Asp Asp Ser Lys Asn Ser Leu Tyr Leu Gln Met Asn Ser  
 195 200 205  
 Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn  
 210 215 220  
 Phe Gly Asn Ser Tyr Val Ser Trp Phe Ala Tyr Trp Gly Gln Gly Thr  
 225 230 235 240  
 Leu Val Thr Val Ser Ser Gly Gly Cys Gly Gly Gly Glu Val Ala Ala  
 245 250 255  
 Leu Glu Lys Glu Val Ala Ala Leu Glu Lys Glu Val Ala Ala Leu Glu  
 260 265 270  
 Lys Glu Val Ala Ala Leu Glu Lys Gly Gly Gly Asp Lys Thr His Thr  
 275 280 285  
 Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe  
 290 295 300  
 Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro  
 305 310 315 320  
 Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val  
 325 330 335  
 Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr  
 38

340                      345                      350  
 Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val  
                     355                      360                      365  
 Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys  
                     370                      375                      380  
 Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser  
 385                      390                      395                      400  
 Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro  
                     405                      410                      415  
 Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Trp Cys Leu Val  
                     420                      425                      430  
 Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly  
                     435                      440                      445  
 Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp  
                     450                      455                      460  
 Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp  
 465                      470                      475                      480  
 Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His  
                     485                      490                      495  
 Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys  
                     500                      505                      510  
  
 <210> 47  
 <211> 278  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: Synthetic  
                     polypeptide  
  
 <400> 47  
 Gln Ala Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly  
 1                      5                      10                      15  
 Thr Val Thr Leu Thr Cys Arg Ser Ser Thr Gly Ala Val Thr Thr Ser  
                     20                      25                      30  
 Asn Tyr Ala Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly  
                     35                      40                      45  
 Leu Ile Gly Gly Thr Asn Lys Arg Ala Pro Trp Thr Pro Ala Arg Phe  
                     50                      55                      60

Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Ile Thr Gly Ala  
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn  
85 90 95

Leu Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly  
100 105 110

Gly Ser Gly Gly Gly Gly Gln Val Gln Leu Val Gln Ser Gly Gly Gly  
115 120 125

Val Phe Lys Pro Gly Gly Ser Leu Arg Leu Ser Cys Glu Ala Ser Gly  
130 135 140

Phe Thr Phe Thr Glu Tyr Tyr Met Thr Trp Val Arg Gln Ala Pro Gly  
145 150 155 160

Lys Gly Leu Glu Trp Leu Ala Tyr Ile Ser Lys Asn Gly Glu Tyr Ser  
165 170 175

Lys Tyr Ser Pro Ser Ser Asn Gly Arg Phe Thr Ile Ser Arg Asp Asn  
180 185 190

Ala Lys Asn Ser Val Phe Leu Gln Leu Asp Arg Leu Ser Ala Asp Asp  
195 200 205

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

Glu Leu Leu Gln Tyr Ile Phe Asp Leu Trp Gly Gln Gly Ala Arg Val  
225 230 235 240

Thr Val Ser Ser Gly Gly Cys Gly Gly Gly Lys Val Ala Ala Leu Lys  
245 250 255

Glu Lys Val Ala Ala Leu Lys Glu Lys Val Ala Ala Leu Lys Glu Lys  
260 265 270

Val Ala Ala Leu Lys Glu  
275

<210> 48

<211> 217

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
polypeptide

<400> 48

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

Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val  
 20 25 30  
 Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr  
 35 40 45  
 Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu  
 50 55 60  
 Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His  
 65 70 75 80  
 Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys  
 85 90 95  
 Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln  
 100 105 110  
 Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met  
 115 120 125  
 Thr Lys Asn Gln Val Ser Leu Ser Cys Ala Val Lys Gly Phe Tyr Pro  
 130 135 140  
 Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn  
 145 150 155 160  
 Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu  
 165 170 175  
 Val Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val  
 180 185 190  
 Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn Arg Tyr Thr Gln  
 195 200 205  
 Lys Ser Leu Ser Leu Ser Pro Gly Lys  
 210 215

<210> 49

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 49

Asp Lys Thr His Thr Cys Pro Pro Cys Pro  
 1 5 10

<210> 50

<211> 13

<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<400> 50  
Gly Gly Gly Asp Lys Thr His Thr Cys Pro Pro Cys Pro  
1 5 10

<210> 51  
<211> 125  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 51  
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Thr Tyr  
20 25 30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
35 40 45

Gly Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
50 55 60

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

Leu Tyr Leu Gln Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Val Tyr  
85 90 95

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Val Ser Trp Phe  
100 105 110

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
115 120 125

<210> 52  
<211> 110  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 52  
Gln Ala Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly  
1 5 10 15

Thr Val Thr Leu Thr Cys Arg Ser Ser Thr Gly Ala Val Thr Thr Ser  
42

20

25

30

Asn Tyr Ala Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly  
35 40 45

Leu Ile Gly Gly Thr Asn Lys Arg Ala Pro Trp Thr Pro Ala Arg Phe  
50 55 60

Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Ile Thr Gly Ala  
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn  
85 90 95

Leu Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly  
100 105 110

<210> 53

<211> 118

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 53

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

Thr Leu Thr Leu Thr Cys Thr Phe Ser Gly Phe Ser Leu Ser Thr Ser  
20 25 30

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

Trp Leu Ala His Ile Trp Trp Asp Asp Asp Lys Arg Tyr Asn Pro Ala  
50 55 60

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

Val Leu Thr Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr  
85 90 95

Cys Ala Gln Ile Asn Pro Ala Trp Phe Ala Tyr Trp Gly Gln Gly Thr  
100 105 110

Leu Val Thr Val Ser Ser  
115

<210> 54

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 54

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

Glu Arg Ala Thr Ile Asn Cys Lys Ala Ser Gln Ser Val Asp Phe Asp  
20 25 30

Gly Asp Ser Phe Met Asn Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro  
35 40 45

Lys Leu Leu Ile Tyr Thr Thr Ser Asn Leu Glu Ser Gly Val Pro Asp  
50 55 60

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser  
65 70 75 80

Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln Ser Asn  
85 90 95

Glu Asp Pro Tyr Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys  
100 105 110

<210> 55

<211> 110

<212> PRT

<213> Homo sapiens

<400> 55

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

Glu Arg Ala Thr Ile His Cys Lys Ser Ser Gln Thr Leu Leu Tyr Ser  
20 25 30

Ser Asn Asn Arg His Ser Ile Ala Trp Tyr Gln Gln Arg Pro Gly Gln  
35 40 45

Pro Pro Lys Leu Leu Leu Tyr Trp Ala Ser Met Arg Leu Ser Gly Val  
50 55 60

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
65 70 75 80

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

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

<210> 56

<211> 126  
 <212> PRT  
 <213> Homo sapiens

<400> 56  
 Gln Val Gln Leu Val Gln Ser Gly Gly Gly Val Phe Lys Pro Gly Gly  
 1 5 10 15

Ser Leu Arg Leu Ser Cys Glu Ala Ser Gly Phe Thr Phe Thr Glu Tyr  
 20 25 30

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

Ala Tyr Ile Ser Lys Asn Gly Glu Tyr Ser Lys Tyr Ser Pro Ser Ser  
 50 55 60

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

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

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

Phe Asp Leu Trp Gly Gln Gly Ala Arg Val Thr Val Ser Ser  
 115 120 125

<210> 57  
 <211> 399  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polynucleotide

|                                                                       |     |
|-----------------------------------------------------------------------|-----|
| <400> 57                                                              |     |
| gaggtkcagc tgggtggagtc tggggggtggc ttgggtccagc cggggggggtc cctgagactc | 60  |
| tcttgtgcag cctctggatt cagcgtcagc tacgactata tggcctgggt ccgccaggct     | 120 |
| ccagggaagg gactggagtg ggtctctatt atttatgggtg gtggtagtcc atattacgca    | 180 |
| gactctgtga agggccgatt cgccatctcc agagacacct ccaggaatac actggatctt     | 240 |
| caaatgagca gcctgagacg tgacgacagc ggtgtttact tctgtgagc gggactcgcc      | 300 |
| tcgctcttcg atctctgggg ccgaggcacc ctggtcactg tctcgtcagc atccccgacc     | 360 |
| agccccaagg tcttcccgcgt gagcctcgac agcaccagc                           | 399 |

<210> 58  
 <211> 846  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 45

polynucleotide

<400> 58  
gaaattgtgt tgacrcagtc tccaggcacc ctgtctttgt ctccaggaga aacagccacc 60  
ctctcctgca gggccagtcg gcgtgttaac gtcaactacc tagcctggta tcaacacaga 120  
cctggccaga gtcccaggct cctcatgtac ggtccttaca acaggcccac tggcatccccg 180  
ggcaggttct ggggcgagtg gtctgggcca ctcttctact tcaacatcga cagactggag 240  
cctgttgatc gagcagtcta ttactgtcta cactttgact ctgatacttc ttcgtgggag 300  
ttcggccgag ggaccaaggt ggaggtcaaa cgaactgtgg ctgcaccatc ttcttctact 360  
ttccaaaaac atctgaagca gttttaatct caacttctct catcaaaccg ggggggggag 420  
atcaagaccg atggggccagc cacggttggg tggaccggca cggggggccg cccacagcga 480  
aaaaaagggg gagacccaga gtgtgagggc actagagggg tggggacaga cccttctggg 540  
gacttgaagg gggagagtcg ccccccacatg cccaaccggg ggcccaccac cgggcggttt 600  
cacggacgtt attaacgggc cggaattttt cccccgtgtt tcatacaagc cccccctgg 660  
aggggggaaa caaaccctgc caaaaagggg cctttattct caaaccaaca acgcgcgccc 720  
ccaaaccctc caaaattttt ccccccaaac caaacacaaa cccccccccc cccccccccc 780  
ccccccccc cccccccccc cccccccccc cccccccccc cccccccccc cccccccccc 840  
cccccc 846

<210> 59  
<211> 351  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
polynucleotide

<400> 59  
gaggtkcagc tgggtggagtc tgggggtggc ttgggtccagc cggggggggtc cctgagactc 60  
tcttgtgcag cctctggatt cagcgtcagc tacgactata tggcctgggt ccgccaggct 120  
ccaggggaagg gactggagtg ggtctctatt atttatggtg gtggtagtcc atattacgca 180  
gactctgtga agggccgatt cgccatctcc agagacacct ccaggaatac actggatctt 240  
caaatgagca gcctgagacg tgacgacagc ggtgtttact tctgtgagag gggactcgcc 300  
tcgctcttcg atctctgggg ccgaggcacc ctggtcactg tctcgtcagc a 351

<210> 60  
<211> 333  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
polynucleotide

<400> 60  
gaaattgtgt tgacrcagtc tccaggcacc ctgtctttgt ctccaggaga aacagccacc 60

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| ctctcctgca gggccagtcg gcgtgttaac gtcaactacc tagcctggta tcaacacaga | 120 |
| cctggccaga gtcccaggct cctcatgtac ggtccttaca acaggcccac tggcatcccg | 180 |
| ggcaggttct ggggcgagtg gtctgggcca ctcttcactc tcaacatcga cagactggag | 240 |
| cctgttgatc gagcagtcta ttactgtcta cactttgact ctgatacttc ttcgtgggcg | 300 |
| ttcggccgag ggaccaaggt ggaggtcaaa cga                              | 333 |

<210> 61  
 <211> 117  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 61  
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
 1 5 10 15  
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Val Ser Tyr Asp  
 20 25 30  
 Tyr Met Ala Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
 35 40 45  
 Ser Ile Ile Tyr Gly Gly Gly Ser Pro Tyr Tyr Ala Asp Ser Val Lys  
 50 55 60  
 Gly Arg Phe Ala Ile Ser Arg Asp Thr Ser Arg Asn Thr Leu Asp Leu  
 65 70 75 80  
 Gln Met Ser Ser Leu Arg Arg Asp Asp Ser Gly Val Tyr Phe Cys Ala  
 85 90 95  
 Arg Gly Leu Ala Ser Leu Phe Asp Leu Trp Gly Arg Gly Thr Leu Val  
 100 105 110  
 Thr Val Ser Ser Ala  
 115

<210> 62  
 <211> 111  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 62  
 Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly  
 1 5 10 15  
 Glu Thr Ala Thr Leu Ser Cys Arg Ala Ser Arg Arg Val Asn Val Asn  
 20 25 30

Tyr Leu Ala Trp Tyr Gln His Arg Pro Gly Gln Ser Pro Arg Leu Leu  
35 40 45

Met Tyr Gly Pro Tyr Asn Arg Pro Thr Gly Ile Pro Gly Arg Phe Trp  
50 55 60

Gly Glu Trp Ser Gly Pro Leu Phe Thr Leu Asn Ile Asp Arg Leu Glu  
65 70 75 80

Pro Val Asp Arg Ala Val Tyr Tyr Cys Leu His Phe Asp Ser Asp Thr  
85 90 95

Ser Ser Trp Ala Phe Gly Arg Gly Thr Lys Val Glu Val Lys Arg  
100 105 110

<210> 63  
<211> 1000  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 63  
cagggtgcagc tggtrcagtc tgggacttaa tcctctacac acacccatat ctcttacgct 60  
ccataacgga cctactttgc actaatcctt aggacacgcc gactcctcct cgggggtaaac 120  
tctataaaga tgacaaaaga tagtaacctt ggaatagaac aatgcaatat actaaagaac 180  
tgatccttga cactgctacc gcctaggtat tcgcaatata acaaatatca tcatccgacc 240  
caagtatatg ctggatttgt taaaatagtc agagaactat atctatctgc aatggcttac 300  
agctaagcca gaatctacaa taaaaacaac aagcgggaac gcttccaaag aaaaaacca 360  
tatactcagg tctgttcacc atctcaatca ccgactttca cacatTTTTT cccaggctta 420  
caaagatatt cagggtTTTT ttttcctttt ccattccaga ggaaccacag tgcagcgtgt 480  
cagtaggggg gtaaggaaaa taagcctggt tcctcagtgt gtctctctgg caagtcttgg 540  
ggcgcctcct ttagaaataa tctcacccca gcccccgcc acctccaggg aatggacgag 600  
tagtcgagac aaatcttccc cttatgtta gaagaaacaa ccaaccaga taaaatgccg 660  
cggaagcgtc acatttctcc caaactcaac ctatatcgca tctaacaggg gataaagcag 720  
ctcaaaaaaa gacacggcgg cctgtatgtg ggagagatcg gtttctctcc ttacagaacg 780  
gagacccccg cgaattaaaa atggggccaa gagaaaagag ttaatttttc ttctgggtat 840  
gtgatggggg gggagaataa tctgcgcacc agaccacagg gtagctgcgt acgtctcggg 900  
gggtccctga gactctcctg tgcagcctct ggattcagcg tcaggaacga ccagatggcc 960  
tgggtccgcc aggctccagg gaagcgactg gagtgggtct 1000

<210> 64  
<211> 822

<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 64  
gaaattgtgt tgacrcagtc tccaggcacc ctgtccttgt ctccagggga gagagccacc 60  
ctctcctgca gggccaatcg gcggattgac atgaacgcct tggcctggta ccagcaccga 120  
tctggccagg ctcccaggct cctcaccat ggtgtctata acagggccac tggcatccca 180  
gacaggttca gtggctattg gtctgggcca gagttcacc tcgtcatcag cagactggag 240  
cctgaagatt ttgcagtcta ttactgtgta cactttctct acgaaaatcc agcgtgggcg 300  
ttcggccgag ggaccaagat agagggtcaag cgaactgtgg ctgcaccatc tgctcacatc 360  
ttccaaccat atgatgagca cttgaaatct gaaactgcct catcacccct ggcggggaaa 420  
aacaagaacg gtgggggagc cacagggtgcc aaaaacttta tgctgctccg ggcaaaagcc 480  
cccgtggaat ttcataaaaa aggggtaccc attagtagac cgcaaaatgc cgggccaaat 540  
ctcctaaata acagaggtag aattaaccaa acagatgtcc aaagaacttt gctggaacac 600  
cgtaagcggg atcaaagagg aggggggaga gaaccggggg gccctgccc gatatatatc 660  
tgtaaacagc cgggccaatg gatttcctcc cccctgtggg ccctaaaaaa aggggggtgtt 720  
cttaaaccca caaaaaaagg gaaaacggtg tcccgggaaa cacacctttc tccaatatt 780  
atttcgcgcg gggaaaaaaa gaaaaacaaa aaaaaaaccc cc 822

<210> 65  
<211> 351  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 65  
gaggtgcagc tgggtggagtc tgggggtagc tgcgtacgtc tcgggggggtc cctgagactc 60  
tcctgtgcag cctctggatt cagcgtcagg aacgaccaga tggcctgggt ccgccaggct 120  
ccagggaagc gactggagtg ggtctctatt attaacgatg gtgctagtcc atactacgca 180  
gactctgtga agggccgctt cgccatgtcc agagacacct ccaagaatac agtgtttctt 240  
cagatgaaca gcctgagacg tgacgacaca gctgtttatt tctgtgagc ggggatcgcc 300  
tcattcttcg atgtctgggg ccgtggcagc ctggtcgtg tctcgtcagc a 351

<210> 66  
<211> 333  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 66  
gaaattgtgt tgacrcagtc tccaggcacc ctgtccttgt ctccagggga gagagccacc 60  
ctctcctgca gggccaatcg gcggattgac atgaacgcct tggcctggta ccagcaccga 120  
tctggccagg ctcccaggct cctcaccat ggtgtctata acagggccac tggcatccca 180  
gacaggttca gtggctattg gtctgggcca gagttcaccc tcgtcatcag cagactggag 240  
cctgaagatt ttgcagtcta ttactgtgta cactttctct acgaaaatcc agcgtgggag 300  
ttcggccgag ggaccaagat agaggtcaag cga 333

<210> 67  
<211> 117  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 67  
Glu Val Gln Leu Val Glu Ser Gly Gly Ser Cys Val Arg Leu Gly Gly  
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Val Arg Asn Asp  
20 25 30

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

Ser Ile Ile Asn Asp Gly Ala Ser Pro Tyr Tyr Ala Asp Ser Val Lys  
50 55 60

Gly Arg Phe Ala Met Ser Arg Asp Thr Ser Lys Asn Thr Val Phe Leu  
65 70 75 80

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

Arg Gly Ile Ala Ser Phe Phe Asp Val Trp Gly Arg Gly Thr Leu Val  
100 105 110

Ala Val Ser Ser Ala  
115

<210> 68  
<211> 111  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 68  
Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly  
1 5 10 15

Glu Arg Ala Thr Leu Ser Cys Arg Ala Asn Arg Arg Ile Asp Met Asn  
20 25 30

Ala Leu Ala Trp Tyr Gln His Arg Ser Gly Gln Ala Pro Arg Leu Leu  
35 40 45

Thr His Gly Val Tyr Asn Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser  
50 55 60

Gly Tyr Trp Ser Gly Pro Glu Phe Thr Leu Val Ile Ser Arg Leu Glu  
65 70 75 80

Pro Glu Asp Phe Ala Val Tyr Tyr Cys Val His Phe Leu Tyr Glu Asn  
85 90 95

Pro Ala Trp Ala Phe Gly Arg Gly Thr Lys Ile Glu Val Lys Arg  
100 105 110

<210> 69  
<211> 402  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
polynucleotide

<400> 69  
gaggtkcagc tgggtggagtc tgggggtggc gtggtccacc ctgggggggtc cctgagactc 60  
tcctgtgcag cctctggatt cagcgtcagt cagcacttca tggcctggat ccgccaggct 120  
ccaggaaagg gactggagtg gatctctatc atatataaca ctggttctcg atactactac 180  
gcagactctg tgaagggccg cttcgccctc tccagagata cgtccaacaa cacactgatt 240  
cttcacatga gcggcctgag acgtgacgac acggctatct atttctgtgc cagggggagtc 300  
gcctcgttct tcgaattgtg gggccgtggc accctgggtc ctgtctcgtc agcctccacc 360  
aagggcccat cggtcttccc cctggcaccc tcctccaaga gc 402

<210> 70  
<211> 836  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
polynucleotide

<400> 70  
gaaacgacac tcacgcagtc tccagccatc ctgtctgtgt ctccagggga aaccgccacc 60  
ctctcctgca gggccagtcg ccgtgttgac atgaacggcc tcgcctggta ccaacacagg 120  
cctggccagg ctcccaggct cctcatgcat ggtgtttata atagggccgc cggcatctca 180  
ggcaggttca ctggcagttg gtctgggcca gtcttcactc tcaccatcag cagactggag 240  
cctgaagatt ttggagtcta ttactgtcaa cacttttact atgagacttc agcgtgggag 300

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| ttcggccgag ggaccagggg ggagggcaaa cgaactgtgg ctgcaccatc ttctcctatc  | 360 |
| ttccaaaaaa acaacctccc aatgacagct gtaaatgtaa cataactgtg gcacaatcca  | 420 |
| tcagcatccg ccgcggaagg gcgagcaaaag ggccccccgc cgcccgcccg gggggggggg | 480 |
| gggggggggtg gggggggccc ccctgggagg gggggcccac cccccccggc cccccccgg  | 540 |
| gccccggcccc cccccccccc cgcccccccc ccccgggagg ggccccaca gggccccggg  | 600 |
| ggggccccct cccccccccc cccaaacccc cccccccccc cccccccccc ccgcccggcc  | 660 |
| cccccccccc cccccccccc cccccccccc aaaccccccc cccccccccc cccccccccc  | 720 |
| cccccccccc cccccccccc cccccccccc cccccccccc cccccccccc cccccccccc  | 780 |
| cccccccccc cccccccccc cccccccccc cccccccccc cccccccccc cccccccc    | 836 |

<210> 71  
 <211> 354  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polynucleotide

|                                                                                 |     |
|---------------------------------------------------------------------------------|-----|
| <400> 71<br>gaggtkcagc tggaggagtc tgggggtggc gtgggtccacc ctgggggggtc cctgagactc | 60  |
| tcctgtgcag cctctggatt cagcgtcagt cacgacttca tggcctggat ccgccaggct               | 120 |
| ccaggaaaagg gactggagtg gatctctatc atatataaca ctggttctcg atactactac              | 180 |
| gcagactctg tgaagggccg cttcgccctc tccagagata cgtccaacaa cacactgatt               | 240 |
| cttcacatga gcggcctgag acgtgacgac acggctatct atttctgtgc caggggagtc               | 300 |
| gcctcgttct tcgaattgtg gggccgtggc accctgggtca ctgtctcgtc agcc                    | 354 |

<210> 72  
 <211> 333  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polynucleotide

|                                                                               |     |
|-------------------------------------------------------------------------------|-----|
| <400> 72<br>gaaacgacac tcacgcagtc tccagccatc ctgtctgtgt ctccagggga aaccgccacc | 60  |
| ctctcctgca gggccagtcg ccgtgttgac atgaacggcc tcgcctggta ccaacacagg             | 120 |
| cctggccagg ctcccaggct cctcatgcat ggtgtttata atagggccgc cggcatctca             | 180 |
| ggcagggttca ctggcagttg gtctgggcca gtcttcactc tcaccatcag cagactggag            | 240 |
| cctgaagatt ttggagtcta ttactgtcaa cacttttact atgagacttc agcgtgggag             | 300 |
| ttcggccgag ggaccagggg ggagggcaaa cga                                          | 333 |

<210> 73  
 <211> 118  
 <212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 73

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val His Pro Gly Gly  
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Val Ser His Asp  
20 25 30

Phe Met Ala Trp Ile Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile  
35 40 45

Ser Ile Ile Tyr Asn Thr Gly Ser Arg Tyr Tyr Tyr Ala Asp Ser Val  
50 55 60

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

Leu His Met Ser Gly Leu Arg Arg Asp Asp Thr Ala Ile Tyr Phe Cys  
85 90 95

Ala Arg Gly Val Ala Ser Phe Phe Glu Leu Trp Gly Arg Gly Thr Leu  
100 105 110

Val Thr Val Ser Ser Ala  
115

<210> 74

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 74

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

Glu Thr Ala Thr Leu Ser Cys Arg Ala Ser Arg Arg Val Asp Met Asn  
20 25 30

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

Met His Gly Val Tyr Asn Arg Ala Ala Gly Ile Ser Gly Arg Phe Thr  
50 55 60

Gly Ser Trp Ser Gly Pro Val Phe Thr Leu Thr Ile Ser Arg Leu Glu  
65 70 75 80

Pro Glu Asp Phe Gly Val Tyr Tyr Cys Gln His Phe Tyr Tyr Glu Thr  
85 90 95

Ser Ala Trp Ala Phe Gly Arg Gly Thr Arg Val Glu Gly Lys Arg  
100 105 110

<210> 75  
<211> 369  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 75  
caggtgcagc tgtgcggagt cgggccagga ctggtgaagc cttcacagac cttgtccctc 60  
agttgcactg tctctggtgg ctccagcagt agtggtgctc actactggag ttggatccgc 120  
cagtaccag ggaagggcct ggagtggatt ggttacatcc attacagtgg gaacacttac 180  
tacaaccctg ccctcaagag tcgaattacc atatcacaac acacgtctga gaaccagttc 240  
tccctgaagc tcaactctgt gactgttgca gacacggccg tctattactg tgcgagaggg 300  
acccgtctcc ggacactacg gaatgctttt gatatttggg gccaggggac aagggtcacc 360  
gtctcttca 369

<210> 76  
<211> 330  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 76  
cagtctgccc tgactcagcc tccctccgcg tccgggtctc ctggacagtc agtcaccatc 60  
tcctgcactg gaaccagcag tgacgttggg ggttataact atgtttcctg gtaccaacac 120  
caccaggca aagcccccaa actcataatt tctgaggtca ataaccggcc ctcaggggtc 180  
cctgatcgtt tctctggctc caagtctggc aacacggcct ccctgaccgt ctctgggctc 240  
caggctgagg atgaggctga atattactgc agctcataca cagacatcca caatttcgtc 300  
ttcggcggag ggaccaagct gaccgtccta 330

<210> 77  
<211> 123  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 77  
Gln Val Gln Leu Cys Gly Val Gly Pro Gly Leu Val Lys Pro Ser Gln  
1 5 10 15

Thr Leu Ser Leu Ser Cys Thr Val Ser Gly Gly Ser Ser Ser Ser Gly  
20 25 30

Ala His Tyr Trp Ser Trp Ile Arg Gln Tyr Pro Gly Lys Gly Leu Glu  
35 40 45

Trp Ile Gly Tyr Ile His Tyr Ser Gly Asn Thr Tyr Tyr Asn Pro Ser  
50 55 60

Leu Lys Ser Arg Ile Thr Ile Ser Gln His Thr Ser Glu Asn Gln Phe  
65 70 75 80

Ser Leu Lys Leu Asn Ser Val Thr Val Ala Asp Thr Ala Val Tyr Tyr  
85 90 95

Cys Ala Arg Gly Thr Arg Leu Arg Thr Leu Arg Asn Ala Phe Asp Ile  
100 105 110

Trp Gly Gln Gly Thr Arg Val Thr Val Ser Ser  
115 120

<210> 78

<211> 110

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 78

Gln Ser Ala Leu Thr Gln Pro Pro Ser Ala Ser Gly Ser Pro Gly Gln  
1 5 10 15

Ser Val Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Gly Tyr  
20 25 30

Asn Tyr Val Ser Trp Tyr Gln His His Pro Gly Lys Ala Pro Lys Leu  
35 40 45

Ile Ile Ser Glu Val Asn Asn Arg Pro Ser Gly Val Pro Asp Arg Phe  
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Val Ser Gly Leu  
65 70 75 80

Gln Ala Glu Asp Glu Ala Glu Tyr Tyr Cys Ser Ser Tyr Thr Asp Ile  
85 90 95

His Asn Phe Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
100 105 110

<210> 79

<211> 378

<212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 79  
 cagggtgcagc tgggtgcagtc tggggggaggc gttttcaagc ctggaggggtc cctgagactc 60  
 tcctgtgaag cctctggatt cacatttact gaatattaca tgacttgggt ccgccaggct 120  
 cctgggaagg ggctggagtg gcttgcgtat attagtaaga atgggtgaata ttcaaaatat 180  
 tcaccgtcct caaacggccg gttcaccatc tccagagaca acgccaagaa ctcagtgttt 240  
 ctgcaattgg acagactgag cgccgacgac acggccgtct attactgtgc gagagcggac 300  
 ggattaacat acttctctga attactccaa tacatttttg acctctgggg ccaggggagcc 360  
 cgggtcaccg tctcctcg 378

<210> 80  
 <211> 147  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 80  
 Met Glu Thr Asp Thr Leu Leu Leu Trp Val Leu Leu Leu Trp Val Pro  
 1 5 10 15  
 Gly Ser Thr Gly Asp Gln Val Gln Leu Val Gln Ser Gly Gly Gly Val  
 20 25 30  
 Phe Lys Pro Gly Gly Ser Leu Arg Leu Ser Cys Glu Ala Ser Gly Phe  
 35 40 45  
 Thr Phe Thr Glu Tyr Tyr Met Thr Trp Val Arg Gln Ala Pro Gly Lys  
 50 55 60  
 Gly Leu Glu Trp Leu Ala Tyr Ile Ser Lys Asn Gly Glu Tyr Ser Lys  
 65 70 75 80  
 Tyr Ser Pro Ser Ser Asn Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala  
 85 90 95  
 Lys Asn Ser Val Phe Leu Gln Leu Asp Arg Leu Ser Ala Asp Asp Thr  
 100 105 110  
 Ala Val Tyr Tyr Cys Ala Arg Ala Asp Gly Leu Thr Tyr Phe Ser Glu  
 115 120 125  
 Leu Leu Gln Tyr Ile Phe Asp Leu Trp Gly Gln Gly Ala Arg Val Thr  
 130 135 140

Val Ser Ser  
145

<210> 81  
<211> 134  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 81  
Met Glu Thr Asp Thr Leu Leu Leu Trp Val Leu Leu Leu Trp Val Pro  
1 5 10 15

Gly Ser Thr Gly Asp Glu Thr Thr Leu Thr Gln Ser Pro Asp Ser Leu  
20 25 30

Ala Val Ser Pro Gly Glu Arg Ala Thr Ile His Cys Lys Ser Ser Gln  
35 40 45

Thr Leu Leu Tyr Ser Ser Asn Asn Arg His Ser Ile Ala Trp Tyr Gln  
50 55 60

Gln Arg Pro Gly Gln Pro Pro Lys Leu Leu Leu Tyr Trp Ala Ser Met  
65 70 75 80

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

Asp Phe Thr Leu Thr Ile Asn Asn Leu Gln Ala Glu Asp Val Ala Ile  
100 105 110

Tyr Tyr Cys His Gln Tyr Ser Ser His Pro Pro Thr Phe Gly His Gly  
115 120 125

Thr Arg Val Glu Leu Arg  
130

<210> 82  
<211> 339  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 82  
gaaacgacac tcacgcagtc tccagactcc ctggctgtgt ctccgggcga gagggccacc 60  
atccactgca agtccagcca gactcttttg tacagctcca acaatagaca ctccattgct 120  
tggtaccaac agagaccagg acagcctcct aaattactcc ttattgggc atctatgcgg 180  
ctttccgggg tccctgaccg attcagtggc agcgggtctg ggacagattt cactctcacc 240  
atcaacaacc tgcaggctga ggatgtggcc atctattact gtcaccaata ttccagtcac 300  
57

cccccgacgt tcggccacgg gaccaggggtg gagctcaga

339