

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

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 <151> 2015-08-18

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<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
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 <213> Artificial Sequence

<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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 tcatgcactg ggacttcaag cgatgtgggc ggggtacaact atgtgagttg gtaccagcac 120
 catcccggga aggcacctaa actgatcatt agcgaagtga acaatcgacc aagcggcgctc 180
 cccgaccggt tcagcggcag caagtctggc aataccgccca gtctgacagt ctcaggcctg 240
 caggccgagg atgaagctga gtactattgc tcatcataca ctgacatcca taacttcgtc 300
 ttcggcggcg gaactaaact gaccgtgctg ggtggcggat ccggcggcgg aggcgaggtg 360
 cagctgggtg agtctggggg aggcttggtc cagcctggag ggtccctgag actctcctgt 420
 gcagcctctg gattcacctt cagcacatac gctatgaatt ggggccgccca ggctccaggg 480
 aaggggcttg agtggggttg 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 gaggtcgcag 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 acaaaagggc 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 ggaaaaggtc 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
cccccgacgt tcggccacgg gaccaggggtg gagatcaaag gtggaggatc cggcggcgga	360
ggcgagggtgc agctgggtgga gtctggggga ggcttggtcc agcctggagg gtccctgaga	420
ctctcctgtg cagcctctgg attcaccttc agcacatacg ctatgaattg ggtccgccag	480
gctccaggga aggggctgga gtgggttga 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

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

<210> 18

<211> 828

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 18

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gaaattgtgt tgacgcagtc tccaggcacc ctgtccttgt ctccagggga gagagccacc      60
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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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<210> 19

<211> 267

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 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 gggggtgat ccggcggagg tggagagggtg 360
cagctgggtg agtctggagg tggcgtgggc caccctggag gaagcctgag actctcctgt 420
gcagcctctg gattcagcgt caggaacgac cagatggcct ggggccgcca ggctccaggg 480
aagcgactgg agtgggtctc tattattaac gatggtgcta gtccatacta cgcagactct 540
gtgaagggcc gcttcgccat gtccagagac acctccaaga atacagtgtt tcttcagatg 600
aacagcctga gacgtgacga cacagctgtt tatttctgtg cgagggggat cgcctcattc 660
ttcgatgtct ggggccgtgg cacgctgggc actgtctcgt cagcctccac caagggcaaa 720
gtggccgcgt 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 agtgggttgg aaggatcagg tccaagtaca acaattatgc aacctactat	540
gccgactctg tgaagggtag attcaccatc tcaagagatg attcaaagaa ctactgtat	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

<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 gctctgtggg atagcaatct gtgggtgttc 300
gggggtggca caaaactgac tgtgctggga ggggggtggat ccggcggagg tggagagggtg 360
cagctgggtg agtctggagg tggcgtgggc 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
gtcgcctgcac ttgaaaagga ggtcgcagcc 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	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
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> 30			
<211> 277			
<212> PRT			
<213> Artificial Sequence			
<220>			
<223> Description of Artificial Sequence: Synthetic polypeptide			
<400> 30			
Asp Val Val Met Thr Gln Thr Pro Phe Ser Leu Pro Val Ser Leu Gly	1	5	10
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> 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 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 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

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

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<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 ttcgtgggcg      300
ttcggcccag ggaccaaggt ggaggtcaaa cgaactgtgg ctgcaccatc ttcttctactc      360
ttccaaaaac atctgaagca gttttaatct caacttctct catcaaaccg ggggggggag      420
atcaagaccg atggggccagc cacggttggt 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

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

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

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<400> 59
gaggtkcagc tgggtggagtc tgggggtggc ttggtccagc 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

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

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

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<400> 60
gaaattgtgt tgacrcagtc tccaggcacc ctgtctttgt ctccaggaga aacagccacc      60

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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 cgggggtaaacc 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 aagcggggaac gcttccaaag aaaaaaacca 360
tatactcagg tctgttcacc atctcaatca ccgactttca cacatTTTTT cccaggctta 420
caaagatatt cagggtTTTT ttttcctttt ccattccaga ggaaccacag tgcagcgtgt 480
cagtaggggg gtaaggaaaa taagcctgggt tcctcagtggt 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 tgtcgctccg ggcaaaagcc 480
cccgtggaat ttcataaaaa aggggtaccc attagtagac cgcaaaatgc cgggccaaat 540
ctcctaaata acagaggtag aattaaccaa acagatgtcc aaagaacttt gctggaacac 600
cgtaagcggg atcaaagagg aggggggaga gaaccggggg gcccctgccg gatatatatc 660
tgtaaacagc cggggccaatg 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 ccgtggcacg 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 accctgggtca 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 ccttgggagg 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 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 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 ctcagggggtc 180
cctgatcggt 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
 caggtgcagc tgggtgcagtc tgggggaggc gttttcaagc ctggagggtc 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