SEQUENCE LISTING

<110> NOVARTIS AG
LES LABORATOIRES SERVIER

<120> MCL-1 INHIBITOR ANTIBODY-DRUG CONJUGATES AND METHODS OF USE

<130> 132043-00220

<140> PCT/US2020/033602
<141> 2020-05-19

<150> 62/850,098
<151> 2019-05-20

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<170> PatentIn version 3.5

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Trp Ile Asn Pro Asn Thr Gly Glu Pro Thr Phe Asp Asp Asp Phe Lys
1 5 10 15

Gly

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

<400> 3
Ser Arg Gly Lys Asn Glu Ala Trp Phe Ala Tyr
1 5 10

<210> 4
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<213> Artificial Sequence

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peptide"

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Asn Tyr Gly Val Asn
1 5

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peptide"

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Gly Tyr Thr Phe Thr Asn Tyr
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peptide"

<400> 6
Asn Pro Asn Thr Gly Glu
1 5

<210> 7
<211> 8
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<213> Artificial Sequence

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

<400> 7
Gly Tyr Thr Phe Thr Asn Tyr Gly
1 5

<210> 8
<211> 8
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<213> Artificial Sequence

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

<400> 8
Ile Asn Pro Asn Thr Gly Glu Pro
1 5

<210> 9
<211> 13
<212> PRT
<213> Artificial Sequence

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

<400> 9
Ser Arg Ser Arg Gly Lys Asn Glu Ala Trp Phe Ala Tyr
1 5 10

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<212> PRT
<213> Artificial Sequence

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

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

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr

20 25 30

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

Gly Trp Ile Asn Pro Asn Thr Gly Glu Pro Thr Phe Asp Asp Asp Phe
50 55 60

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

Leu Gln Ile Ser Ser Leu Lys Ala Asp Asp Thr Ala Val Tyr Phe Cys
85 90 95

Ser Arg Ser Arg Gly Lys Asn Glu Ala Trp Phe Ala Tyr Trp Gly Gln
100 105 110

Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 11
<211> 360
<212> DNA
<213> Artificial Sequence

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

<400> 11
caggttcagc tccagcagtc tggcagcgag ctgaaaaaac ctggcgcctc cgtgaaggtg 60

tcctgcaagg cttctggcta cacctttacc aactacggcg tgaactggat caagcaggcc 120

cctggacaag gcctccaatg gatgggctgg atcaacccca ataccggcga gcccaccttc 180

gacgacgatt tcaagggcag attcgccttc agcctggaca cctctgtgtc cacagcctac 240

ctccagatca gcagcctgaa ggccgatgat accgccgtgt acttctgctc cagaagccgg 300

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<210> 12

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<212> PRT
<213> Artificial Sequence

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

<400> 12
Gln Val Gln Leu Gln Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala
1 5 10 15

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

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

Gly Trp Ile Asn Pro Asn Thr Gly Glu Pro Thr Phe Asp Asp Asp Phe
50 55 60

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

Leu Gln Ile Ser Ser Leu Lys Ala Asp Asp Thr Ala Val Tyr Phe Cys
85 90 95

Ser Arg Ser Arg Gly Lys Asn Glu Ala Trp Phe Ala Tyr Trp Gly Gln
100 105 110

Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val
115 120 125

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

Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Cys Pro Val Thr Val Ser
145 150 155 160

Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val
165 170 175

Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro
180 185 190

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Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys
        195                 200                 205

Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Pro Lys Ser Cys Asp
    210                 215                 220

Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly
225                 230                 235                 240

Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile
                245                 250                 255

Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu
            260                 265                 270

Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His
        275                 280                 285

Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg
    290                 295                 300

Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys
305                 310                 315                 320

Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu
                325                 330                 335

Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr
            340                 345                 350

Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu
        355                 360                 365

Thr Cys Leu Val Lys Gly Phe Tyr Pro Cys Asp Ile Ala Val Glu Trp
    370                 375                 380

Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val
385                 390                 395                 400

Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp
                405                 410                 415

Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His
            420                 425                 430
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Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro
435 440 445

Gly Lys
450

<210> 13
<211> 1350
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<213> Artificial Sequence

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

<400> 13
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tcctgcaagg cttctggcta cacctttacc aactacggcg tgaactggat caagcaggcc 120

cctggacaag gcctccaatg gatgggctgg atcaacccca ataccggcga gcccaccttc 180

gacgacgatt tcaagggcag attcgccttc agcctggaca cctctgtgtc cacagcctac 240

ctccagatca gcagcctgaa ggccgatgat accgccgtgt acttctgctc cagaagccgg 300

ggaaagaacg aggcttggtt tgcctattgg ggccagggca cactggtcac cgttagctct 360

gctagcacca agggcccaag tgtgtttccc ctggccccca gcagcaagtc tacttccggc 420

ggaactgctg ccctgggttg cctggtgaag gactacttcc cctgtcccgt gacagtgtcc 480

tggaactctg gggctctgac ttccggcgtg cacaccttcc ccgccgtgct gcagagcagc 540

ggcctgtaca gcctgagcag cgtggtgaca gtgccctcca gctctctggg aacccagacc 600

tatatctgca acgtgaacca caagcccagc aacaccaagg tggacaagag agtggagccc 660

aagagctgcg acaagaccca cacctgcccc ccctgcccag ctccagaact gctgggaggg 720

ccttccgtgt tcctgttccc ccccaagccc aaggacaccc tgatgatcag caggaccccc
780

gaggtgacct gcgtggtggt ggacgtgtcc cacgaggacc cagaggtgaa gttcaactgg
840

tacgtggacg gcgtggaggt gcacaacgcc aagaccaagc ccagagagga gcagtacaac
900

agcacctaca gggtggtgtc cgtgctgacc gtgctgcacc aggactggct gaacggcaaa
960

gaatacaagt gcaaagtctc caacaaggcc ctgccagccc caatcgaaaa gacaatcagc
1020

aaggccaagg gccagccacg ggagccccag gtgtacaccc tgcccccag ccgggaggag
1080

atgaccaaga accaggtgtc cctgacctgt ctggtgaagg gcttctaccc ctgtgatatc
1140

gccgtggagt gggagagcaa cggccagccc gagaacaact acaagaccac ccccccagtg
1200

ctggacagcg acggcagctt cttcctgtac agcaagctga ccgtggacaa gtccaggtgg
1260

cagcagggca acgtgttcag ctgcagcgtg atgcacgagg ccctgcacaa ccactacacc
1320

cagaagtccc tgagcctgag ccccggcaag
1350

<210> 14
<211> 450
<212> PRT
<213> Artificial Sequence

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

<400> 14
Gln Val Gln Leu Gln Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala
1 5 10 15

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

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

Gly Trp Ile Asn Pro Asn Thr Gly Glu Pro Thr Phe Asp Asp Asp Phe

```
    50                  55                  60

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

Leu Gln Ile Ser Ser Leu Lys Ala Asp Asp Thr Ala Val Tyr Phe Cys
                85                  90                  95

Ser Arg Ser Arg Gly Lys Asn Glu Ala Trp Phe Ala Tyr Trp Gly Gln
            100                 105                 110

Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val
        115                 120                 125

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

Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Cys Pro Val Thr Val Ser
145                 150                 155                 160

Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val
                165                 170                 175

Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro
            180                 185                 190

Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys
        195                 200                 205

Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Pro Lys Ser Cys Asp
    210                 215                 220

Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly
225                 230                 235                 240

Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile
                245                 250                 255

Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Ala Val Ser His Glu
            260                 265                 270

Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His
        275                 280                 285
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Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg
    290                 295                 300

Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys
305                 310                 315                 320

Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Ala Ala Pro Ile Glu
                325                 330                 335

Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr
            340                 345                 350

Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu
        355                 360                 365

Thr Cys Leu Val Lys Gly Phe Tyr Pro Cys Asp Ile Ala Val Glu Trp
    370                 375                 380

Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val
385                 390                 395                 400

Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp
                405                 410                 415

Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His
            420                 425                 430

Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro
        435                 440                 445

Gly Lys
    450
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<210> 15
<211> 450
<212> PRT
<213> Artificial Sequence

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

<400> 15

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Gln Val Gln Leu Gln Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala
1               5                   10                  15
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Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
            20                  25                  30

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

Gly Trp Ile Asn Pro Asn Thr Gly Glu Pro Thr Phe Asp Asp Asp Phe
    50                  55                  60

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

Leu Gln Ile Ser Ser Leu Lys Ala Asp Asp Thr Ala Val Tyr Phe Cys
                85                  90                  95

Ser Arg Ser Arg Gly Lys Asn Glu Ala Trp Phe Ala Tyr Trp Gly Gln
            100                 105                 110

Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val
        115                 120                 125

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

Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Cys Pro Val Thr Val Ser
145                 150                 155                 160

Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val
                165                 170                 175

Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro
            180                 185                 190

Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys
        195                 200                 205

Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Pro Lys Ser Cys Asp
    210                 215                 220

Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly
225                 230                 235                 240
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```
Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile
                245                 250                 255

Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Ala Val Ser His Glu
            260                 265                 270

Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His
        275                 280                 285

Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Ala Ser Thr Tyr Arg
    290                 295                 300

Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys
305                 310                 315                 320

Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Ala Ala Pro Ile Glu
                325                 330                 335

Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr
            340                 345                 350

Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu
        355                 360                 365

Thr Cys Leu Val Lys Gly Phe Tyr Pro Cys Asp Ile Ala Val Glu Trp
    370                 375                 380

Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val
385                 390                 395                 400

Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp
                405                 410                 415

Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His
            420                 425                 430

Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro
        435                 440                 445

Gly Lys
    450
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<210> 16
<211> 16

<212> PRT
<213> Artificial Sequence

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

<400> 16
Arg Ser Ser Gln Ser Leu Val His Arg Asn Gly Asn Thr Tyr Leu His
1 5 10 15

<210> 17
<211> 11
<212> PRT
<213> Artificial Sequence

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

<400> 17
Gln Ser Leu Val His Arg Asn Gln Asn Thr Tyr
1 5 10

<210> 18
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
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<223> /note="Description of Artificial Sequence: Synthetic
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<400> 18
Ser Gln Ser Ser His Val Pro Pro Thr
1 5

<210> 19
<211> 12
<212> PRT
<213> Artificial Sequence

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

<400> 19
Ser Gln Ser Leu Val His Arg Asn Gly Asn Thr Tyr
1 5 10

<210> 20
<211> 3
<212> PRT
<213> Artificial Sequence

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

<400> 20
Thr Val Ser
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<210> 21
<211> 6
<212> PRT
<213> Artificial Sequence

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

<400> 21
Ser Ser His Val Pro Pro
1 5

<210> 22
<211> 11
<212> PRT
<213> Artificial Sequence

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

<400> 22
Gln Ser Leu Val His Arg Asn Gly Asn Thr Tyr
1 5 10

<210> 23
<211> 112
<212> PRT
<213> Artificial Sequence

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

<400> 23
Asp Ile Gln Leu Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Leu Gly
1 5 10 15

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

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

Pro Arg Leu Leu Ile Tyr Thr 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 Val Gly Val Tyr Phe Cys Ser Gln Ser
85 90 95

Ser His Val Pro Pro Thr Phe Gly Ala Gly Thr Arg Leu Glu Ile Lys
100 105 110

<210> 24
<211> 336
<212> DNA
<213> Artificial Sequence

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

<400> 24
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atcagctgta gaagcagcca gagcctggtg cacagaaacg gcaacaccta cctgcactgg 120

ttccagcaga ggcctggcca gtctcctaga ctgctgatct acaccgtgtc caacagattc 180

agcggcgtgc ccgatagatt ttccggcagc ggctctggca ccgacttcac cctgaagatt 240

agcagagtgg aagccgagga cgtgggcgtg tacttctgta gccagtctag ccacgtgcca 300

cctacctttg gcgccggaac cagactggaa atcaag 336

<210> 25
<211> 219

<212> PRT
<213> Artificial Sequence

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

<400> 25
Asp Ile Gln Leu Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Leu Gly
1 5 10 15

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

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

Pro Arg Leu Leu Ile Tyr Thr 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 Val Gly Val Tyr Phe Cys Ser Gln Ser
85 90 95

Ser His Val Pro Pro Thr Phe Gly Ala Gly Thr Arg Leu Glu Ile Lys
100 105 110

Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu
115 120 125

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

Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln
145 150 155 160

Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser
165 170 175

Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu
180 185 190

Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser

195 200 205

Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
210 215

<210> 26
<211> 657
<212> DNA
<213> Artificial Sequence

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

<400> 26
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atcagctgta gaagcagcca gagcctggtg cacagaaacg gcaacaccta cctgcactgg 120

ttccagcaga ggcctggcca gtctcctaga ctgctgatct acaccgtgtc caacagattc 180

agcggcgtgc ccgatagatt ttccggcagc ggctctggca ccgacttcac cctgaagatt 240

agcagagtgg aagccgagga cgtgggcgtg tacttctgta gccagtctag ccacgtgcca 300

cctacctttg gcgccggaac cagactggaa atcaagcgta cggtggccgc tcccagcgtg 360

ttcatcttcc cccccagcga cgagcagctg aagagtggca ccgccagcgt ggtgtgcctg 420

ctgaacaact tctacccccg ggaggccaag gtgcagtgga aggtggacaa cgccctgcag 480

agcggcaaca gccaggagag cgtcaccgag caggacagca aggactccac ctacagcctg 540

agcagcaccc tgaccctgag caaggccgac tacgagaagc ataaggtgta cgcctgcgag 600

gtgacccacc agggcctgtc cagccccgtg accaagagct tcaacagggg cgagtgc 657

<210> 27
<211> 112
<212> PRT
<213> Artificial Sequence

<220>

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

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

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

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

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

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

<210> 28
<211> 336
<212> DNA
<213> Artificial Sequence

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

<400> 28
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atcagctgta gaagcagcca gagcctggtg cacagaaacg gcaacaccta cctgcactgg
120

tatctgcaga agcccggcca gtctcctcag ctgctgatct acaccgtgtc caacagattc
180

agcggcgtgc ccgatagatt ttccggcagc ggctctggca ccgacttcac cctgaagatc
240

tccagagtgg aagccgagga cgtgggcgtg tacttctgta gccagtctag ccacgtgcca
300

cctacctttg gccaggggac caagctggaa atcaag
336

<210> 29
<211> 219
<212> PRT
<213> Artificial Sequence

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

<400> 29
Asp Ile Val Met Thr Gln Thr Pro Leu Ser Leu Pro Val Thr Pro Gly
1 5 10 15

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

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

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

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

Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu
115 120 125

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

Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln
145 150 155 160

Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser
165 170 175

Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu
180 185 190

Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser
195 200 205

Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
210 215

<210> 30
<211> 657
<212> DNA
<213> Artificial Sequence

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

<400> 30
gacattgtga tgacacagac ccctctgagc ctgcctgtga cacctggcga acctgccagc 60

atcagctgta gaagcagcca gagcctggtg cacagaaacg gcaacaccta cctgcactgg 120

tatctgcaga agcccggcca gtctcctcag ctgctgatct acaccgtgtc caacagattc 180

agcggcgtgc ccgatagatt ttccggcagc ggctctggca ccgacttcac cctgaagatc 240

tccagagtgg aagccgagga cgtgggcgtg tacttctgta gccagtctag ccacgtgcca 300

cctacctttg gccaggggac caagctggaa atcaagcgta cggtggccgc tcccagcgtg 360

ttcatcttcc cccccagcga cgagcagctg aagagtggca ccgccagcgt ggtgtgcctg 420

ctgaacaact tctacccccg ggaggccaag gtgcagtgga aggtggacaa cgccctgcag 480

agcggcaaca gccaggagag cgtcaccgag caggacagca aggactccac ctacagcctg 540

agcagcaccc tgaccctgag caaggccgac tacgagaagc ataaggtgta cgcctgcgag 600

gtgacccacc agggcctgtc cagccccgtg accaagagct tcaacagggg cgagtgc 657

<210> 31
<211> 112
<212> PRT
<213> Artificial Sequence

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

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

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

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

Pro Arg Leu Leu Ile Tyr Thr 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 Val Gly Val Tyr Phe Cys Ser Gln Ser
85 90 95

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

<210> 32
<211> 336
<212> DNA
<213> Artificial Sequence

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

<400> 32
gatgtggtta tgacacagag ccctctgagc ctgcctgtga cacttggaca gcctgccagc
60

atcagctgca gatctagcca gagcctggtg cacagaaacg gcaacaccta cctgcactgg
120

tatcagcaga ggcccggaca gtctcccaga ctgctgatct acaccgtgtc caacagattc
180

agcggcgtgc ccgatagatt ttccggcagc ggctctggca ccgacttcac cctgaagatc
240

tccagagtgg aagccgagga cgtgggcgtg tacttctgta gccagtctag ccacgtgcca
300

cctacctttg gccagggcac caagctggaa atcaag
336

<210> 33
<211> 219
<212> PRT
<213> Artificial Sequence

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

<400> 33
Asp Val Val Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Leu Gly
1 5 10 15

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

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

Pro Arg Leu Leu Ile Tyr Thr 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 Val Gly Val Tyr Phe Cys Ser Gln Ser
85 90 95

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

Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu
115 120 125

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

Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln
145 150 155 160

Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser
165 170 175

Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu
180 185 190

Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser
195 200 205

Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
210 215

<210> 34
<211> 657
<212> DNA
<213> Artificial Sequence

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

<400> 34
gatgtggtta tgacacagag ccctctgagc ctgcctgtga cacttggaca gcctgccagc 60

atcagctgca gatctagcca gagcctggtg cacagaaacg gcaacaccta cctgcactgg 120

tatcagcaga ggcccggaca gtctcccaga ctgctgatct acaccgtgtc caacagattc 180

agcggcgtgc ccgatagatt ttccggcagc ggctctggca ccgacttcac cctgaagatc 240

tccagagtgg aagccgagga cgtgggcgtg tacttctgta gccagtctag ccacgtgcca 300

cctacctttg gccagggcac caagctggaa atcaagcgta cggtggccgc tcccagcgtg 360

ttcatcttcc cccccagcga cgagcagctg aagagtggca ccgccagcgt ggtgtgcctg 420

ctgaacaact tctacccccg ggaggccaag gtgcagtgga aggtggacaa cgccctgcag 480

agcggcaaca gccaggagag cgtcaccgag caggacagca aggactccac ctacagcctg
540

agcagcaccc tgaccctgag caaggccgac tacgagaagc ataaggtgta cgcctgcgag
600

gtgacccacc agggcctgtc cagccccgtg accaagagct tcaacagggg cgagtgc
657

<210> 35
<211> 16
<212> PRT
<213> Artificial Sequence

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

<400> 35
Arg Ser Ser Gln Ser Leu Val His Arg Asn Gln Asn Thr Tyr Leu His
1 5 10 15

<210> 36
<211> 112
<212> PRT
<213> Artificial Sequence

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

<400> 36
Asp Ile Gln Leu Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Leu Gly
1 5 10 15

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

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

Pro Arg Leu Leu Ile Tyr Thr 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 Val Gly Val Tyr Phe Cys Ser Gln Ser
85 90 95

Ser His Val Pro Pro Thr Phe Gly Ala Gly Thr Arg Leu Glu Ile Lys
100 105 110

<210> 37
<211> 336
<212> DNA
<213> Artificial Sequence

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

<400> 37
gacattcagc tgacacagag ccctctgagc ctgcctgtta cactgggaca gcctgccagc 60

atcagctgta gaagcagcca gagcctggtg cacagaaacc agaacaccta cctgcactgg 120

ttccagcaga ggcctggcca gtctcctaga ctgctgatct acaccgtgtc caacagattc 180

agcggcgtgc ccgatagatt ttccggcagc ggctctggca ccgacttcac cctgaagatt 240

agcagagtgg aagccgagga cgtgggcgtg tacttctgta gccagtctag ccacgtgcca 300

cctacctttg gcgccggaac cagactggaa atcaag 336

<210> 38
<211> 219
<212> PRT
<213> Artificial Sequence

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

<400> 38
Asp Ile Gln Leu Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Leu Gly
1 5 10 15

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

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

```
Pro Arg Leu Leu Ile Tyr Thr 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 Val Gly Val Tyr Phe Cys Ser Gln Ser
                85                  90                  95

Ser His Val Pro Pro Thr Phe Gly Ala Gly Thr Arg Leu Glu Ile Lys
            100                 105                 110

Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu
        115                 120                 125

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

Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln
145                 150                 155                 160

Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser
                165                 170                 175

Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu
            180                 185                 190

Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser
        195                 200                 205

Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
    210                 215
```

<210> 39
<211> 657
<212> DNA
<213> Artificial Sequence

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

<400> 39
gacattcagc tgacacagag ccctctgagc ctgcctgtta cactgggaca gcctgccagc
60

atcagctgta gaagcagcca gagcctggtg cacagaaacc agaacaccta cctgcactgg
120

ttccagcaga ggcctggcca gtctcctaga ctgctgatct acaccgtgtc caacagattc
180

agcggcgtgc ccgatagatt ttccggcagc ggctctggca ccgacttcac cctgaagatt
240

agcagagtgg aagccgagga cgtgggcgtg tacttctgta gccagtctag ccacgtgcca
300

cctacctttg gcgccggaac cagactggaa atcaagcgta cggtggccgc tcccagcgtg
360

ttcatcttcc cccccagcga cgagcagctg aagagtggca ccgccagcgt ggtgtgcctg
420

ctgaacaact tctaccccg ggaggccaag gtgcagtgga aggtggacaa cgccctgcag
480

agcggcaaca gccaggagag cgtcaccgag caggacagca aggactccac ctacagcctg
540

agcagcaccc tgaccctgag caaggccgac tacgagaagc ataaggtgta cgcctgcgag
600

gtgacccacc agggcctgtc cagccccgtg accaagagct tcaacagggg cgagtgc
657

<210> 40
<211> 112
<212> PRT
<213> Artificial Sequence

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

<400> 40
Asp Ile Val Met Thr Gln Thr Pro Leu Ser Leu Pro Val Thr Pro Gly
1 5 10 15

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

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

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

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

<210> 41
<211> 336
<212> DNA
<213> Artificial Sequence

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

<400> 41
gacattgtga tgacacagac ccctctgagc ctgcctgtga cacctggcga acctgccagc
60

atcagctgta gaagcagcca gagcctggtg caccggaacc agaataccta cctgcactgg
120

tatctgcaga agcccggcca gtctcctcag ctgctgatct acaccgtgtc caacagattc
180

agcggcgtgc ccgatagatt ttccggcagc ggctctggca ccgacttcac cctgaagatc
240

tccagagtgg aagccgagga cgtgggcgtg tacttctgta gccagtctag ccacgtgcca
300

cctacctttg gccaggggac caagctggaa atcaag
336

<210> 42
<211> 219
<212> PRT
<213> Artificial Sequence

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

<400> 42
Asp Ile Val Met Thr Gln Thr Pro Leu Ser Leu Pro Val Thr Pro Gly
1 5 10 15

```
Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val His Arg
            20                  25                  30

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

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

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

Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu
        115                 120                 125

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

Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln
145                 150                 155                 160

Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser
                165                 170                 175

Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu
            180                 185                 190

Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser
        195                 200                 205

Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
    210                 215
```

<210> 43
<211> 657
<212> DNA
<213> Artificial Sequence

<220>

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

<400> 43
gacattgtga tgacacagac ccctctgagc ctgcctgtga cacctggcga acctgccagc
60

atcagctgta gaagcagcca gagcctggtg caccggaacc agaataccta cctgcactgg
120

tatctgcaga agcccggcca gtctcctcag ctgctgatct acaccgtgtc caacagattc
180

agcggcgtgc ccgatagatt ttccggcagc ggctctggca ccgacttcac cctgaagatc
240

tccagagtgg aagccgagga cgtgggcgtg tacttctgta gccagtctag ccacgtgcca
300

cctacctttg gccaggggac caagctggaa atcaagcgta cggtggccgc tcccagcgtg
360

ttcatcttcc cccccagcga cgagcagctg aagagtggca ccgccagcgt ggtgtgcctg
420

ctgaacaact tctacccccg ggaggccaag gtgcagtgga aggtggacaa cgccctgcag
480

agcggcaaca gccaggagag cgtcaccgag caggacagca aggactccac ctacagcctg
540

agcagcaccc tgaccctgag caaggccgac tacgagaagc ataaggtgta cgcctgcgag
600

gtgacccacc agggcctgtc cagccccgtg accaagagct tcaacagggg cgagtgc
657

<210> 44
<211> 112
<212> PRT
<213> Artificial Sequence

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

<400> 44
Asp Val Val Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Leu Gly
1 5 10 15

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

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

Pro Arg Leu Leu Ile Tyr Thr 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 Val Gly Val Tyr Phe Cys Ser Gln Ser
85 90 95

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

<210> 45
<211> 336
<212> DNA
<213> Artificial Sequence

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

<400> 45
gatgtggtta tgacacagag ccctctgagc ctgcctgtga cacttggaca gcctgccagc 60

atcagctgca gatctagcca gagcctggtg caccggaacc agaacacata cctgcactgg 120

tatcagcaga ggcccggaca gtctcccaga ctgctgatct acaccgtgtc caacagattc 180

agcggcgtgc ccgatagatt ttccggcagc ggctctggca ccgacttcac cctgaagatc 240

tccagagtgg aagccgagga cgtgggcgtg tacttctgta gccagtctag ccacgtgcca 300

cctacctttg gccagggcac caagctggaa atcaag 336

<210> 46
<211> 219
<212> PRT
<213> Artificial Sequence

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

polypeptide"

<400> 46

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

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

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

Pro Arg Leu Leu Ile Tyr Thr 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 Val Gly Val Tyr Phe Cys Ser Gln Ser
                85                  90                  95

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

Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu
        115                 120                 125

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

Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln
145                 150                 155                 160

Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser
                165                 170                 175

Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu
            180                 185                 190

Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser
        195                 200                 205

Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
    210                 215
```

<210> 47
<211> 657
<212> DNA
<213> Artificial Sequence

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

<400> 47
gatgtggtta tgacacagag ccctctgagc ctgcctgtga cacttggaca gcctgccagc
60

atcagctgca gatctagcca gagcctggtg caccggaacc agaacacata cctgcactgg
120

tatcagcaga ggcccggaca gtctcccaga ctgctgatct acaccgtgtc caacagattc
180

agcggcgtgc ccgatagatt ttccggcagc ggctctggca ccgacttcac cctgaagatc
240

tccagagtgg aagccgagga cgtgggcgtg tacttctgta gccagtctag ccacgtgcca
300

cctacctttg gccagggcac caagctggaa atcaagcgta cggtggccgc tcccagcgtg
360

ttcatcttcc cccccagcga cgagcagctg aagagtggca ccgccagcgt ggtgtgcctg
420

ctgaacaact tctacccccg ggaggccaag gtgcagtgga aggtggacaa cgccctgcag
480

agcggcaaca gccaggagag cgtcaccgag caggacagca aggactccac ctacagcctg
540

agcagcaccc tgaccctgag caaggccgac tacgagaagc ataaggtgta cgcctgcgag
600

gtgacccacc agggcctgtc cagccccgtg accaagagct tcaacagggg cgagtgc
657

<210> 48
<211> 350
<212> PRT
<213> Homo sapiens

<400> 48
Met Phe Gly Leu Lys Arg Asn Ala Val Ile Gly Leu Asn Leu Tyr Cys
1   5   10   15

Gly Gly Ala Gly Leu Gly Ala Gly Ser Gly Gly Ala Thr Arg Pro Gly
            20   25   30

```
Gly Arg Leu Leu Ala Thr Glu Lys Glu Ala Ser Ala Arg Arg Glu Ile
        35                  40                  45

Gly Gly Gly Glu Ala Gly Ala Val Ile Gly Gly Ser Ala Gly Ala Ser
    50                  55                  60

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

Pro Ile Gly Ala Glu Val Pro Asp Val Thr Ala Thr Pro Ala Arg Leu
                85                  90                  95

Leu Phe Phe Ala Pro Thr Arg Arg Ala Ala Pro Leu Glu Glu Met Glu
            100                 105                 110

Ala Pro Ala Ala Asp Ala Ile Met Ser Pro Glu Glu Glu Leu Asp Gly
        115                 120                 125

Tyr Glu Pro Glu Pro Leu Gly Lys Arg Pro Ala Val Leu Pro Leu Leu
    130                 135                 140

Glu Leu Val Gly Glu Ser Gly Asn Asn Thr Ser Thr Asp Gly Ser Leu
145                 150                 155                 160

Pro Ser Thr Pro Pro Pro Ala Glu Glu Glu Glu Asp Glu Leu Tyr Arg
                165                 170                 175

Gln Ser Leu Glu Ile Ile Ser Arg Tyr Leu Arg Glu Gln Ala Thr Gly
            180                 185                 190

Ala Lys Asp Thr Lys Pro Met Gly Arg Ser Gly Ala Thr Ser Arg Lys
        195                 200                 205

Ala Leu Glu Thr Leu Arg Arg Val Gly Asp Gly Val Gln Arg Asn His
    210                 215                 220

Glu Thr Ala Phe Gln Gly Met Leu Arg Lys Leu Asp Ile Lys Asn Glu
225                 230                 235                 240

Asp Asp Val Lys Ser Leu Ser Arg Val Met Ile His Val Phe Ser Asp
                245                 250                 255
```

```
Gly Val Thr Asn Trp Gly Arg Ile Val Thr Leu Ile Ser Phe Gly Ala
            260                 265                 270

Phe Val Ala Lys His Leu Lys Thr Ile Asn Gln Glu Ser Cys Ile Glu
        275                 280                 285

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

Trp Leu Val Lys Gln Arg Gly Trp Asp Gly Phe Val Glu Phe Phe His
305                 310                 315                 320

Val Glu Asp Leu Glu Gly Gly Ile Arg Asn Val Leu Leu Ala Phe Ala
                325                 330                 335

Gly Val Ala Gly Val Gly Ala Gly Leu Ala Tyr Leu Ile Arg
            340                 345                 350
```

<210> 49
<211> 120
<212> PRT
<213> Artificial Sequence

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

<400> 49

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

Thr Val Lys Val Thr Cys Lys Thr Ser Gly Tyr Thr Phe Thr Asn Tyr
            20                  25                  30

Gly Val Asn Trp Ile Lys Gln Thr Pro Gly Glu Gly Leu Gln Trp Met
        35                  40                  45

Gly Trp Ile Asn Pro Asn Thr Gly Glu Pro Thr Phe Asp Asp Asp Phe
    50                  55                  60

Lys Gly Arg Phe Ala Phe Ser Leu Glu Ser Ser Ala Ser Thr Ala Phe
65                  70                  75                  80

Leu Gln Ile Ser Asn Leu Lys Asn Glu Asp Met Gly Thr Tyr Phe Cys
                85                  90                  95
```

Ser Arg Ser Arg Gly Lys Asn Glu Ala Trp Phe Asp Tyr Trp Gly Gln
100 105 110

Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 50
<211> 112
<212> PRT
<213> Artificial Sequence

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

<400> 50
Asp Ile Gln Leu Thr Gln Thr Pro Leu 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 Arg
20 25 30

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

Pro Lys Leu Leu Ile Tyr Thr 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 Leu Tyr Phe Cys Ser Gln Ser
85 90 95

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

<210> 51
<211> 120
<212> PRT
<213> Artificial Sequence

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

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

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

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

Gly Trp Ile Asn Pro Asn Thr Gly Glu Pro Thr Phe Asp Asp Asp Phe
    50   55   60

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

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

Ser Arg Ser Arg Gly Lys Asn Glu Ala Trp Phe Asp Tyr Trp Gly Gln
            100   105   110

Gly Thr Leu Val Thr Val Ser Ser
        115   120

<210> 52
<211> 120
<212> PRT
<213> Artificial Sequence

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

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

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

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

Gly Trp Ile Asn Pro Asn Thr Gly Glu Pro Thr Phe Asp Asp Asp Phe
    50   55   60

```
Lys Gly Arg Phe Val Phe Ser Leu Asp Ser Ser Val Ser Thr Ala Tyr
65                  70                  75                  80


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


Ser Arg Ser Arg Gly Lys Asn Glu Ala Trp Phe Asp Tyr Trp Gly Gln
            100                 105                 110


Gly Thr Leu Val Thr Val Ser Ser
        115                 120


<210> 53
<211> 120
<212> PRT
<213> Artificial Sequence

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

<400> 53
Gln Val Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala
1               5                   10                  15


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


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


Gly Trp Ile Asn Pro Asn Thr Gly Glu Pro Thr Phe Asp Asp Asp Phe
    50                  55                  60


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


Leu Gln Ile Ser Ser Leu Lys Ala Glu Asp Thr Ala Val Tyr Phe Cys
                85                  90                  95


Ser Arg Ser Arg Gly Lys Asn Glu Ala Trp Phe Asp Tyr Trp Gly Gln
            100                 105                 110


Gly Thr Leu Val Thr Val Ser Ser
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115 120

<210> 54
<211> 120
<212> PRT
<213> Artificial Sequence

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

<400> 54
Gln Val Gln Leu Gln Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala
1 5 10 15

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

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

Gly Trp Ile Asn Pro Asn Thr Gly Glu Pro Thr Phe Asp Asp Asp Phe
50 55 60

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

Leu Gln Ile Ser Ser Leu Lys Ala Glu Asp Thr Ala Val Tyr Phe Cys
85 90 95

Ser Arg Ser Arg Gly Lys Asn Glu Ala Trp Phe Asp Tyr Trp Gly Gln
100 105 110

Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 55
<211> 120
<212> PRT
<213> Artificial Sequence

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

<400> 55
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala

1 5 10 15

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

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

Gly Trp Ile Asn Pro Asn Thr Gly Glu Pro Thr Phe Asp Asp Asp Phe
50 55 60

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

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

Ser Arg Ser Arg Gly Lys Asn Glu Ala Trp Phe Asp Tyr Trp Gly Gln
100 105 110

Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 56
<211> 120
<212> PRT
<213> Artificial Sequence

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

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

Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30

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

Gly Trp Ile Asn Pro Asn Thr Gly Glu Pro Thr Phe Asp Asp Asp Phe
50 55 60

```
Lys Gly Gln Val Thr Ile Ser Leu Asp Ser Ser Ile Ser Thr Ala Tyr
65                  70                  75                  80


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


Ser Arg Ser Arg Gly Lys Asn Glu Ala Trp Phe Asp Tyr Trp Gly Gln
            100                 105                 110


Gly Thr Leu Val Thr Val Ser Ser
        115                 120


<210> 57
<211> 112
<212> PRT
<213> Artificial Sequence

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

<400> 57
Asp Ile Gln Leu Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Leu Gly
1               5                   10                  15


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


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


Pro Arg Leu Leu Ile Tyr Thr 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 Val Gly Val Tyr Phe Cys Ser Gln Ser
                85                  90                  95


Ser His Val Pro Pro Thr Phe Gly Ala Gly Thr Arg Leu Glu Ile Lys
            100                 105                 110


<210> 58
<211> 112
<212> PRT
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<213> Artificial Sequence

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

<400> 58
Asp Ile Gln Leu Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Leu Gly
1 5 10 15

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

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

Pro Arg Leu Leu Ile Tyr Thr 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 Val Gly Val Tyr Phe Cys Ser Gln Ser
85 90 95

Ser His Val Pro Pro Thr Phe Gly Ala Gly Thr Arg Leu Glu Ile Lys
100 105 110

<210> 59
<211> 112
<212> PRT
<213> Artificial Sequence

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

<400> 59
Asp Ile Gln Leu Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Leu Gly
1 5 10 15

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

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

```
Pro Arg Leu Leu Ile Tyr Thr 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 Val Gly Val Tyr Phe Cys Ser Gln Ser
                85                  90                  95

Ser His Val Pro Pro Thr Phe Gly Ala Gly Thr Arg Leu Glu Ile Lys
            100                 105                 110
```

<210> 60
<211> 112
<212> PRT
<213> Artificial Sequence

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

<400> 60

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

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

Asn Val Asn Thr Tyr Leu His Trp Phe Gln Gln Arg Pro Gly Gln Ser
        35                  40                  45

Pro Arg Leu Leu Ile Tyr Thr 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 Val Gly Val Tyr Phe Cys Ser Gln Ser
                85                  90                  95

Ser His Val Pro Pro Thr Phe Gly Ala Gly Thr Arg Leu Glu Ile Lys
            100                 105                 110
```

<210> 61
<211> 296

<212> PRT
<213> Homo sapiens

<400> 61
Met His Arg Arg Arg Ser Arg Ser Cys Arg Glu Asp Gln Lys Pro Val
1 5 10 15

Met Asp Asp Gln Arg Asp Leu Ile Ser Asn Asn Glu Gln Leu Pro Met
20 25 30

Leu Gly Arg Arg Pro Gly Ala Pro Glu Ser Lys Cys Ser Arg Gly Ala
35 40 45

Leu Tyr Thr Gly Phe Ser Ile Leu Val Thr Leu Leu Leu Ala Gly Gln
50 55 60

Ala Thr Thr Ala Tyr Phe Leu Tyr Gln Gln Gln Gly Arg Leu Asp Lys
65 70 75 80

Leu Thr Val Thr Ser Gln Asn Leu Gln Leu Glu Asn Leu Arg Met Lys
85 90 95

Leu Pro Lys Pro Pro Lys Pro Val Ser Lys Met Arg Met Ala Thr Pro
100 105 110

Leu Leu Met Gln Ala Leu Pro Met Gly Ala Leu Pro Gln Gly Pro Met
115 120 125

Gln Asn Ala Thr Lys Tyr Gly Asn Met Thr Glu Asp His Val Met His
130 135 140

Leu Leu Gln Asn Ala Asp Pro Leu Lys Val Tyr Pro Pro Leu Lys Gly
145 150 155 160

Ser Phe Pro Glu Asn Leu Arg His Leu Lys Asn Thr Met Glu Thr Ile
165 170 175

Asp Trp Lys Val Phe Glu Ser Trp Met His His Trp Leu Leu Phe Glu
180 185 190

Met Ser Arg His Ser Leu Glu Gln Lys Pro Thr Asp Ala Pro Pro Lys
195 200 205

Val Leu Thr Lys Cys Gln Glu Glu Val Ser His Ile Pro Ala Val His
210 215 220

```
Pro Gly Ser Phe Arg Pro Lys Cys Asp Glu Asn Gly Asn Tyr Leu Pro
225                 230                 235                 240

Leu Gln Cys Tyr Gly Ser Ile Gly Tyr Cys Trp Cys Val Phe Pro Asn
                245                 250                 255

Gly Thr Glu Val Pro Asn Thr Arg Ser Arg Gly His His Asn Cys Ser
            260                 265                 270

Glu Ser Leu Glu Leu Glu Asp Pro Ser Ser Gly Leu Gly Val Thr Lys
        275                 280                 285

Gln Asp Leu Gly Pro Val Pro Met
    290                 295
```

<210> 62
<211> 232
<212> PRT
<213> Homo sapiens

<400> 62

```
Met His Arg Arg Arg Ser Arg Ser Cys Arg Glu Asp Gln Lys Pro Val
1               5                   10                  15

Met Asp Asp Gln Arg Asp Leu Ile Ser Asn Asn Glu Gln Leu Pro Met
            20                  25                  30

Leu Gly Arg Arg Pro Gly Ala Pro Glu Ser Lys Cys Ser Arg Gly Ala
        35                  40                  45

Leu Tyr Thr Gly Phe Ser Ile Leu Val Thr Leu Leu Leu Ala Gly Gln
    50                  55                  60

Ala Thr Thr Ala Tyr Phe Leu Tyr Gln Gln Gln Gly Arg Leu Asp Lys
65                  70                  75                  80

Leu Thr Val Thr Ser Gln Asn Leu Gln Leu Glu Asn Leu Arg Met Lys
                85                  90                  95

Leu Pro Lys Pro Pro Lys Pro Val Ser Lys Met Arg Met Ala Thr Pro
            100                 105                 110

Leu Leu Met Gln Ala Leu Pro Met Gly Ala Leu Pro Gln Gly Pro Met
        115                 120                 125
```

```
Gln Asn Ala Thr Lys Tyr Gly Asn Met Thr Glu Asp His Val Met His
    130                 135                 140

Leu Leu Gln Asn Ala Asp Pro Leu Lys Val Tyr Pro Pro Leu Lys Gly
145                 150                 155                 160

Ser Phe Pro Glu Asn Leu Arg His Leu Lys Asn Thr Met Glu Thr Ile
                165                 170                 175

Asp Trp Lys Val Phe Glu Ser Trp Met His His Trp Leu Leu Phe Glu
            180                 185                 190

Met Ser Arg His Ser Leu Glu Gln Lys Pro Thr Asp Ala Pro Pro Lys
        195                 200                 205

Glu Ser Leu Glu Leu Glu Asp Pro Ser Ser Gly Leu Gly Val Thr Lys
    210                 215                 220

Gln Asp Leu Gly Pro Val Pro Met
225                 230
```

<210> 63
<211> 350
<212> PRT
<213> Homo sapiens

<400> 63

```
Met Phe Gly Leu Lys Arg Asn Ala Val Ile Gly Leu Asn Leu Tyr Cys
1               5                   10                  15

Gly Gly Ala Gly Leu Gly Ala Gly Ser Gly Gly Ala Thr Arg Pro Gly
            20                  25                  30

Gly Arg Leu Leu Ala Thr Glu Lys Glu Ala Ser Ala Arg Arg Glu Ile
        35                  40                  45

Gly Gly Gly Glu Ala Gly Ala Val Ile Gly Gly Ser Ala Gly Ala Ser
    50                  55                  60

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

Pro Ile Gly Ala Glu Val Pro Asp Val Thr Ala Thr Pro Ala Arg Leu
                85                  90                  95
```

```
Leu Phe Phe Ala Pro Thr Arg Arg Ala Ala Pro Leu Glu Glu Met Glu
            100                 105                 110

Ala Pro Ala Ala Asp Ala Ile Met Ser Pro Glu Glu Glu Leu Asp Gly
        115                 120                 125

Tyr Glu Pro Glu Pro Leu Gly Lys Arg Pro Ala Val Leu Pro Leu Leu
    130                 135                 140

Glu Leu Val Gly Glu Ser Gly Asn Asn Thr Ser Thr Asp Gly Ser Leu
145                 150                 155                 160

Pro Ser Thr Pro Pro Pro Ala Glu Glu Glu Glu Asp Glu Leu Tyr Arg
                165                 170                 175

Gln Ser Leu Glu Ile Ile Ser Arg Tyr Leu Arg Glu Gln Ala Thr Gly
            180                 185                 190

Ala Lys Asp Thr Lys Pro Met Gly Arg Ser Gly Ala Thr Ser Arg Lys
        195                 200                 205

Ala Leu Glu Thr Leu Arg Arg Val Gly Asp Gly Val Gln Arg Asn His
    210                 215                 220

Glu Thr Ala Phe Gln Gly Met Leu Arg Lys Leu Asp Ile Lys Asn Glu
225                 230                 235                 240

Asp Asp Val Lys Ser Leu Ser Arg Val Met Ile His Val Phe Ser Asp
                245                 250                 255

Gly Val Thr Asn Trp Gly Arg Ile Val Thr Leu Ile Ser Phe Gly Ala
            260                 265                 270

Phe Val Ala Lys His Leu Lys Thr Ile Asn Gln Glu Ser Cys Ile Glu
        275                 280                 285

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

Trp Leu Val Lys Gln Arg Gly Trp Asp Gly Phe Val Glu Phe Phe His
305                 310                 315                 320
```

Val Glu Asp Leu Glu Gly Gly Ile Arg Asn Val Leu Leu Ala Phe Ala
325 330 335

Gly Val Ala Gly Val Gly Ala Gly Leu Ala Tyr Leu Ile Arg
340 345 350

<210> 64
<211> 4
<212> PRT
<213> Artificial Sequence

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

<400> 64
Gly Leu Phe Gly
1

<210> 65
<211> 4
<212> PRT
<213> Artificial Sequence

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

<400> 65
Ala Leu Ala Leu
1

<210> 66
<211> 4
<212> PRT
<213> Artificial Sequence

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

<400> 66
Gly Gly Gly Gly
1

<210> 67
<211> 4
<212> PRT
<213> Artificial Sequence

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

<400> 67
Gly Phe Val Gly
1

<210> 68
<211> 4
<212> PRT
<213> Artificial Sequence

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

<400> 68
Gly Val Phe Gly
1

<210> 69
<211> 4
<212> PRT
<213> Artificial Sequence

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

<400> 69
Gly Phe Leu Gly
1

<210> 70
<211> 7
<212> PRT
<213> Artificial Sequence

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

<400> 70
Thr Val Ser Asn Arg Phe Ser
1   5

<210> 71
<211> 12
<212> PRT

<213> Artificial Sequence

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

<400> 71
Ser Gln Ser Leu Val His Arg Asn Gln Asn Thr Tyr
1 5 10

<210> 72
<211> 21
<212> PRT
<213> Artificial Sequence

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

<220>
<221> MOD_RES
<222> (1)..(1)
<223> Beta-Ala

<220>
<221> MOD_RES
<222> (2)..(2)
<223> Ahx

<400> 72
Xaa Xaa Ala Arg Glu Ile Gly Ala Gln Leu Arg Arg Met Ala Asp Asp
1 5 10 15

Leu Asn Ala Gln Tyr
20