SEQUENCE LISTING

<110> AMGEN INC.

<120> CHIMERIC RECEPTORS TO DLL3 AND METHODS OF USE THEREOF

<130> A-2249-WO-PCT

<140>
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<150> 62/655,725
<151> 2018-04-10

<160> 70

<170> PatentIn version 3.5

<210> 1
<211> 294
<212> DNA
<213> Artificial Sequence

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

<400> 1
cttgataatg aaaagtcaaa cggaacaatc attcacgtga agggcaagca cctctgtccg 60

tcacccttgt tccctggtcc atccaagcca ttctgggtgt tggtcgtagt gggtggagtc 120

ctcgcttgtt actctctgct cgtcaccgtg gcttttataa tcttctgggt tagatccaaa 180

agaagccgcc tgctccatag cgattacatg aatatgactc cacgccgccc tggccccaca 240

aggaaacact accagcctta cgcaccacct agagatttcg ctgcctatcg gagc 294

<210> 2
<211> 98
<212> PRT
<213> Artificial Sequence

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

<400> 2
Leu Asp Asn Glu Lys Ser Asn Gly Thr Ile Ile His Val Lys Gly Lys
1 5 10 15

His Leu Cys Pro Ser Pro Leu Phe Pro Gly Pro Ser Lys Pro Phe Trp
20 25 30

Val Leu Val Val Val Gly Gly Val Leu Ala Cys Tyr Ser Leu Leu Val
35 40 45

Thr Val Ala Phe Ile Ile Phe Trp Val Arg Ser Lys Arg Ser Arg Leu
50 55 60

Leu His Ser Asp Tyr Met Asn Met Thr Pro Arg Arg Pro Gly Pro Thr
65 70 75 80

Arg Lys His Tyr Gln Pro Tyr Ala Pro Pro Arg Asp Phe Ala Ala Tyr
85 90 95

Arg Ser

<210> 3
<211> 90
<212> DNA
<213> Artificial Sequence

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

<400> 3
cttgataatg aaaagtcaaa cggaacaatc attcacgtga agggcaagca cctctgtccg 60

tcacccttgt tccctggtcc atccaagcca 90

<210> 4
<211> 30
<212> PRT

<213> Artificial Sequence

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

<400> 4
Leu Asp Asn Glu Lys Ser Asn Gly Thr Ile Ile His Val Lys Gly Lys
1 5 10 15

His Leu Cys Pro Ser Pro Leu Phe Pro Gly Pro Ser Lys Pro
20 25 30

<210> 5
<211> 81
<212> DNA
<213> Artificial Sequence

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

<400> 5
ttctgggtgt tggtcgtagt gggtggagtc ctcgcttgtt actctctgct cgtcaccgtg 60

gcttttataa tcttctgggt t 81

<210> 6
<211> 27
<212> PRT
<213> Artificial Sequence

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

<400> 6
Phe Trp Val Leu Val Val Val Gly Gly Val Leu Ala Cys Tyr Ser Leu
1 5 10 15

Leu Val Thr Val Ala Phe Ile Ile Phe Trp Val
20 25

<210> 7
<211> 123
<212> DNA
<213> Artificial Sequence

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

<400> 7
agatccaaaa gaagccgcct gctccatagc gattacatga atatgactcc acgccgccct 60

ggccccacaa ggaaacacta ccagccttac gcaccaccta gagatttcgc tgcctatcgg 120

agc 123

<210> 8
<211> 41
<212> PRT
<213> Artificial Sequence

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

<400> 8
Arg Ser Lys Arg Ser Arg Leu Leu His Ser Asp Tyr Met Asn Met Thr
1 5 10 15

Pro Arg Arg Pro Gly Pro Thr Arg Lys His Tyr Gln Pro Tyr Ala Pro
20 25 30

Pro Arg Asp Phe Ala Ala Tyr Arg Ser
35 40

<210> 9
<211> 336
<212> DNA
<213> Artificial Sequence

<220>

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

<400> 9
agggtgaagt tttccagatc tgcagatgca ccagcgtatc agcagggcca gaaccaactg 60

tataacgagc tcaacctggg acgcagggaa gagtatgacg ttttggacaa gcgcagagga 120

cgggaccctg agatgggtgg caaaccaaga cgaaaaaacc cccaggaggg tctctataat 180

gagctgcaga aggataagat ggctgaagcc tattctgaaa taggcatgaa aggagagcgg 240

agaaggggaa aagggcacga cggtttgtac cagggactca gcactgctac gaaggatact 300

tatgacgctc tccacatgca agccctgcca cctagg 336

<210> 10
<211> 112
<212> PRT
<213> Artificial Sequence

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

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

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

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

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

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

Arg Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly Leu Ser Thr Ala
85 90 95

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

<210> 11
<211> 117
<212> DNA
<213> Artificial Sequence

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

<400> 11
attgaggtga tgtatccacc gccttacctg gataacgaaa agagtaacgg taccatcatt 60

cacgtgaaag gtaaacacct gtgtccttct cccctcttcc ccgggccatc aaagccc 117

<210> 12
<211> 39
<212> PRT
<213> Artificial Sequence

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

<400> 12
Ile Glu Val Met Tyr Pro Pro Pro Tyr Leu Asp Asn Glu Lys Ser Asn
1 5 10 15

Gly Thr Ile Ile His Val Lys Gly Lys His Leu Cys Pro Ser Pro Leu
20 25 30

Phe Pro Gly Pro Ser Lys Pro
35

<210> 13
<211> 288

<212> DNA
<213> Artificial Sequence

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

<400> 13
gctgcagcat tgagcaactc aataatgtat tttagtcact ttgtaccagt gttcttgccg 60

gctaagccta ctaccacacc cgctccacgg ccacctaccc cagctcctac catcgcttca 120

cagcctctgt ccctgcgccc agaggcttgc cgaccggccg caggggggcgc tgttcatacc 180

agaggactgg atttcgcctg cgatatctat atctgggcac ccctggccgg aacctgcggc 240

gtactcctgc tgtccctggt catcacgctc tattgtaatc acaggaac 288

<210> 14
<211> 96
<212> PRT
<213> Artificial Sequence

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

<400> 14
Ala Ala Ala Leu Ser Asn Ser Ile Met Tyr Phe Ser His Phe Val Pro
1 5 10 15

Val Phe Leu Pro Ala Lys Pro Thr Thr Thr Pro Ala Pro Arg Pro Pro
20 25 30

Thr Pro Ala Pro Thr Ile Ala Ser Gln Pro Leu Ser Leu Arg Pro Glu
35 40 45

Ala Cys Arg Pro Ala Ala Gly Gly Ala Val His Thr Arg Gly Leu Asp
50 55 60

Phe Ala Cys Asp Ile Tyr Ile Trp Ala Pro Leu Ala Gly Thr Cys Gly
65 70 75 80

Val Leu Leu Leu Ser Leu Val Ile Thr Leu Tyr Cys Asn His Arg Asn
85 90 95

<210> 15
<211> 141
<212> DNA
<213> Artificial Sequence

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

<400> 15
cgcttttccg tcgttaagcg ggggagaaaa aagctgctgt acattttcaa acagccgttt 60

atgaggccgg tccaaacgac tcaggaagag gacggctgct cctgccgctt tcctgaggag 120

gaggagggcg ggtgcgaact g 141

<210> 16
<211> 47
<212> PRT
<213> Artificial Sequence

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

<400> 16
Arg Phe Ser Val Val Lys Arg Gly Arg Lys Lys Leu Leu Tyr Ile Phe
1 5 10 15

Lys Gln Pro Phe Met Arg Pro Val Gln Thr Thr Gln Glu Glu Asp Gly
20 25 30

Cys Ser Cys Arg Phe Pro Glu Glu Glu Glu Gly Gly Cys Glu Leu
35 40 45

<210> 17
<211> 1449

<212> DNA
<213> Artificial Sequence

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

<400> 17
atggcactcc ccgtaactgc tctgctgctg ccgttggcat tgctcctgca cgccgcacgc 60

ccgcaggtgc aactgcagga aagcgggccc ggtctggtga agccctcaga aacgctctcc 120

ctcacctgta cagtctctgg cgattcaatc tcttcatatt actggacgtg gatcaggcag 180

cctcccggca agggactgga gtggatcgga tatatctact atagtggcac cactaactat 240

aatccttccc tgaaaagccg ggtgacaatc tctgttgaca cctccaagag ccagttcagc 300

ctgaaactct ccagtgtgac agccgccgat acagccgtgt attactgtgc ctctatcgct 360

gtgcgcgggt tctttttga ttattggggc caggggacac tggtgaccgt tagcagcggg 420

ggaggagggt ccggtggcgg cggcagcgga ggcgggggtt cagaaattgt actgacccag 480

tcccccggca cgctctctct ctccccaggg gaaagggcaa cccttagctg ccgggcgagc 540

cagagcgtga gttcctccta cctcgcgtgg tatcagcaga agcctggaca ggctcccaga 600

ctgctgattt acggggcttc tacgagagcc accggcatac ctgataggtt ctctggctcc 660

gggtctggga ccgactttac tcttacaatc agcagacttg agcctgaaga cttcgctgtg 720

tattattgtc aacaatacgg aacgtccccc cttacctttg gtggcgggac aaaagtggaa 780

attaagaggg ccgctgccct tgataatgaa aagtcaaacg gaacaatcat tcacgtgaag 840

ggcaagcacc tctgtccgtc acccttgttc cctggtccat ccaagccatt ctgggtgttg 900

gtcgtagtgg gtggagtcct cgcttgttac tctctgctcg tcaccgtggc ttttataatc 960

ttctgggttc gcttttccgt cgttaagcgg gggagaaaaa agctgctgta cattttcaaa 1020

cagccgttta tgaggccggt ccaaacgact caggaagaag acggctgctc ctgccgcttt 1080

cctgaggagg aggagggcgg gtgcgaactg agggtgaagt tttccagatc tgcagatgca 1140

ccagcgtatc agcagggcca gaaccaactg tataacgagc tcaacctggg acgcagggaa 1200

gagtatgacg ttttggacaa gcgcagagga cgggaccctg agatgggtgg caaaccaaga 1260

cgaaaaaacc cccaggaggg tctctataat gagctgcaga aggataagat ggctgaagcc 1320

tattctgaaa taggcatgaa aggagagcgg agaaggggaa aagggcacga cggtttgtac 1380

cagggactca gcactgctac gaaggatact tatgacgctc tccacatgca agccctgcca 1440

cctaggtaa 1449

<210> 18
<211> 482
<212> PRT
<213> Artificial Sequence

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

<400> 18

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

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

Val Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Asp
35 40 45

Ser Ile Ser Ser Tyr Tyr Trp Thr Trp Ile Arg Gln Pro Pro Gly Lys
50 55 60

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

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

Ser Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala
100 105 110

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Val Tyr Tyr Cys Ala Ser Ile Ala Val Arg Gly Phe Phe Phe Asp Tyr
        115                 120                 125

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
    130                 135                 140

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

Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser
                165                 170                 175

Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp Tyr Gln
            180                 185                 190

Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Thr
        195                 200                 205

Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr
    210                 215                 220

Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val
225                 230                 235                 240

Tyr Tyr Cys Gln Gln Tyr Gly Thr Ser Pro Leu Thr Phe Gly Gly Gly
                245                 250                 255

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

Asn Gly Thr Ile Ile His Val Lys Gly Lys His Leu Cys Pro Ser Pro
        275                 280                 285

Leu Phe Pro Gly Pro Ser Lys Pro Phe Trp Val Leu Val Val Val Gly
    290                 295                 300
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Gly Val Leu Ala Cys Tyr Ser Leu Leu Val Thr Val Ala Phe Ile Ile
305                 310                 315                 320

Phe Trp Val Arg Phe Ser Val Val Lys Arg Gly Arg Lys Lys Leu Leu
                325                 330                 335

Tyr Ile Phe Lys Gln Pro Phe Met Arg Pro Val Gln Thr Thr Gln Glu
            340                 345                 350

Glu Asp Gly Cys Ser Cys Arg Phe Pro Glu Glu Glu Glu Gly Gly Cys
        355                 360                 365

Glu Leu Arg Val Lys Phe Ser Arg Ser Ala Asp Ala Pro Ala Tyr Gln
    370                 375                 380

Gln Gly Gln Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu
385                 390                 395                 400

Glu Tyr Asp Val Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu Met Gly
                405                 410                 415

Gly Lys Pro Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu
            420                 425                 430

Gln Lys Asp Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly
        435                 440                 445

Glu Arg Arg Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly Leu Ser
    450                 455                 460

Thr Ala Thr Lys Asp Thr Tyr Asp Ala Leu His Met Gln Ala Leu Pro
465                 470                 475                 480

Pro Arg
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<210> 19

<211> 1431
<212> DNA
<213> Artificial Sequence

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

<400> 19
atggcactcc ccgtaactgc tctgctgctg ccgttggcat tgctcctgca cgccgcacgc 60

ccgcaggtgc aactgcagga aagcgggccc ggtctggtga agccctcaga aacgctctcc 120

ctcacctgta cagtctctgg cgattcaatc tcttcatatt actggacgtg gatcaggcag 180

cctcccggca agggactgga gtggatcgga tatatctact atagtggcac cactaactat 240

aatccttccc tgaaaagccg ggtgacaatc tctgttgaca cctccaagag ccagttcagc 300

ctgaaactct ccagtgtgac agccgccgat acagccgtgt attactgtgc ctctatcgct 360

gtgcgcgggt tctttttga ttattggggc caggggacac tggtgaccgt tagcagcggg 420

ggaggagggt ccggtggcgg cggcagcgga ggcgggggtt cagaaattgt actgacccag 480

tcccccggca cgctctctct ctccccaggg gaaagggcaa cccttagctg ccgggcgagc 540

cagagcgtga gttcctccta cctcgcgtgg tatcagcaga agcctggaca ggctcccaga 600

ctgctgattt acggggcttc tacgagagcc accggcatac ctgataggtt ctctggctcc 660

gggtctggga ccgactttac tcttacaatc agcagacttg agcctgaaga cttcgctgtg 720

tattattgtc aacaatacgg aacgtccccc cttacctttg gtggcgggac aaaagtggaa 780

attaagaggg ccgctgccct tgataatgaa aagtcaaacg gaacaatcat tcacgtgaag 840

ggcaagcacc tctgtccgtc acccttgttc cctggtccat ccaagccatt ctgggtgttg 900

gtcgtagtgg gtggagtcct cgcttgttac tctctgctcg tcaccgtggc ttttataatc 960

ttctgggtta gatccaaaag aagccgcctg ctccatagcg attacatgaa tatgactcca 1020

cgccgccctg gccccacaag gaaacactac cagccttacg caccacctag agatttcgct 1080

gcctatcgga gccgagtgaa attttctaga tcagctgatg ctcccgccta tcagcaggga 1140

cagaatcaac tttacaatga gctgaacctg ggtcgcagag aagagtacga cgttttggac 1200

aaacgccggg gccgagatcc tgagatgggg gggaagccga gaaggaagaa tcctcaagaa 1260

ggcctgtaca acgagcttca aaaagacaaa atggctgagg cgtactctga gatcggcatg 1320

aagggcgagc ggagacgagg caagggtcac gatggcttgt atcagggcct gagtacagcc 1380

acaaaggaca cctatgacgc cctccacatg caggcactgc ccccacgcta g 1431

<210> 20
<211> 476
<212> PRT
<213> Artificial Sequence

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

<400> 20
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

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

Val Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Asp
35 40 45

Ser Ile Ser Ser Tyr Tyr Trp Thr Trp Ile Arg Gln Pro Pro Gly Lys
50 55 60

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

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

Ser Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala
100 105 110

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Val Tyr Tyr Cys Ala Ser Ile Ala Val Arg Gly Phe Phe Phe Asp Tyr
        115                 120                 125

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
    130                 135                 140

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

Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser
                165                 170                 175

Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp Tyr Gln
            180                 185                 190

Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Thr
        195                 200                 205

Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr
    210                 215                 220

Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val
225                 230                 235                 240

Tyr Tyr Cys Gln Gln Tyr Gly Thr Ser Pro Leu Thr Phe Gly Gly Gly
                245                 250                 255

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

Asn Gly Thr Ile Ile His Val Lys Gly Lys His Leu Cys Pro Ser Pro
        275                 280                 285

Leu Phe Pro Gly Pro Ser Lys Pro Phe Trp Val Leu Val Val Val Gly
    290                 295                 300

Gly Val Leu Ala Cys Tyr Ser Leu Leu Val Thr Val Ala Phe Ile Ile
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305 310 315 320

Phe Trp Val Arg Ser Lys Arg Ser Arg Leu Leu His Ser Asp Tyr Met
325 330 335

Asn Met Thr Pro Arg Arg Pro Gly Pro Thr Arg Lys His Tyr Gln Pro
340 345 350

Tyr Ala Pro Pro Arg Asp Phe Ala Ala Tyr Arg Ser Arg Val Lys Phe
355 360 365

Ser Arg Ser Ala Asp Ala Pro Ala Tyr Gln Gln Gly Gln Asn Gln Leu
370 375 380

Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu Glu Tyr Asp Val Leu Asp
385 390 395 400

Lys Arg Arg Gly Arg Asp Pro Glu Met Gly Gly Lys Pro Arg Arg Lys
405 410 415

Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu Gln Lys Asp Lys Met Ala
420 425 430

Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly Glu Arg Arg Arg Gly Lys
435 440 445

Gly His Asp Gly Leu Tyr Gln Gly Leu Ser Thr Ala Thr Lys Asp Thr
450 455 460

Tyr Asp Ala Leu His Met Gln Ala Leu Pro Pro Arg
465 470 475

<210> 21
<211> 1458
<212> DNA
<213> Artificial Sequence

<220>

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

<400> 21
atggcactcc ccgtaactgc tctgctgctg ccgttggcat tgctcctgca cgccgcacgc 60

ccgcaggtcc agctggtgca gtctggggca gaggtgaaac ggccgggtgc aagcgtgaag 120

gtgtcctgca aagcctctgg ctataccttt actgggtact atatgcactg ggttcggcag 180

gcgccaggac agggtcttga gtggatgggt tggattgatc caaactctgg cgatacaaat 240

tacgcacaga aattccaggg ccgcgtgacg atgactcgag acacttccat atccaccgcc 300

tatatggaag tgaatagact ccggtctgac gacactgctg tctattactg tgcaagggat 360

cccaaccggc ggagttggta ttacggaatg gatgtctggg cccagggtac taccgtcacg 420

gtgtcttctg gcggcggggg ctcaggagga ggaggcagcg gtggaggagg cagcgatatt 480

cagatgacac aaagcccttc tagtctctcc gcaagcgttg gcgaccgcgt gaccattacg 540

tgtcaggctt cacaagatat tcgaaactac ctgaactggt atcagcagaa gcccggcaaa 600

gcacctaagc tgctgattta tgacgctagc aaccttgaga ctggcgtccc ctccagattt 660

tccggcagcg gctcaggcac cgactttact tttaccatct ccacactcca gccagaagat 720

attgcaacgt attactgcca acattatgat aacctgcctt tgaccttcgg aggtggcacc 780

aaggtagaga tcagaagagc cgctgccctt gataatgaaa agtcaaacgg aacaatcatt 840

cacgtgaagg gcaagcacct ctgtccgtca cccttgttcc ctggtccatc caagccattc 900

tgggtgttgg tcgtagtggg tggagtcctc gcttgttact ctctgctcgt caccgtggct 960

tttataatct tctgggttcg cttttccgtc gttaagcggg ggagaaaaaa gctgctgtac 1020

attttcaaac agccgtttat gaggccggtc caaacgactc aggaagaaga cggctgctcc 1080

tgccgctttc ctgaggagga ggagggcggg tgcgaactga gggtgaagtt ttccagatct 1140

gcagatgcac cagcgtatca gcagggccag aaccaactgt ataacgagct caacctggga 1200

cgcagggaag agtatgacgt tttggacaag cgcagaggac gggaccctga gatgggtggc 1260

aaaccaagac gaaaaaaccc ccaggagggt ctctataatg agctgcagaa ggataagatg 1320

gctgaagcct attctgaaat aggcatgaaa ggagagcgga gaaggggaaa agggcacgac 1380

ggtttgtacc agggactcag cactgctacg aaggatactt atgacgctct ccacatgcaa 1440

gccctgccac ctaggtaa 1458

<210> 22
<211> 485
<212> PRT
<213> Artificial Sequence

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

<400> 22
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

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

Lys Arg Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Gly Tyr Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

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

Tyr Ala Gln Lys Phe Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser
85 90 95

Ile Ser Thr Ala Tyr Met Glu Val Asn Arg Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Asp Pro Asn Arg Arg Ser Trp Tyr Tyr
115 120 125

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Gly Met Asp Val Trp Ala Gln Gly Thr Thr Val Thr Val Ser Ser Gly
    130                 135                 140

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile
145                 150                 155                 160

Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg
                165                 170                 175

Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Arg Asn Tyr Leu Asn
            180                 185                 190

Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Asp
        195                 200                 205

Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly Ser Gly
    210                 215                 220

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

Ile Ala Thr Tyr Tyr Cys Gln His Tyr Asp Asn Leu Pro Leu Thr Phe
                245                 250                 255

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

Glu Lys Ser Asn Gly Thr Ile Ile His Val Lys Gly Lys His Leu Cys
        275                 280                 285

Pro Ser Pro Leu Phe Pro Gly Pro Ser Lys Pro Phe Trp Val Leu Val
    290                 295                 300

Val Val Gly Gly Val Leu Ala Cys Tyr Ser Leu Leu Val Thr Val Ala
305                 310                 315                 320
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Phe Ile Ile Phe Trp Val Arg Phe Ser Val Val Lys Arg Gly Arg Lys
325 330 335

Lys Leu Leu Tyr Ile Phe Lys Gln Pro Phe Met Arg Pro Val Gln Thr
340 345 350

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

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

Ala Tyr Gln Gln Gly Gln Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly
385 390 395 400

Arg Arg Glu Glu Tyr Asp Val Leu Asp Lys Arg Arg Gly Arg Asp Pro
405 410 415

Glu Met Gly Gly Lys Pro Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr
420 425 430

Asn Glu Leu Gln Lys Asp Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly
435 440 445

Met Lys Gly Glu Arg Arg Arg Gly Lys Gly His Asp Gly Leu Tyr Gln
450 455 460

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

Ala Leu Pro Pro Arg
485

<210> 23
<211> 1440
<212> DNA
<213> Artificial Sequence

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

<400> 23
atggcactcc ccgtaactgc tctgctgctg ccgttggcat tgctcctgca cgccgcacgc 60

ccgcaggtcc agctggtgca gtctggggca gaggtgaaac ggccgggtgc aagcgtgaag 120

gtgtcctgca aagcctctgg ctataccttt actgggtact atatgcactg ggttcggcag 180

gcgccaggac agggtcttga gtggatgggt tggattgatc caaactctgg cgatacaaat 240

tacgcacaga aattccaggg ccgcgtgacg atgactcgag acacttccat atccaccgcc 300

tatatggaag tgaatagact ccggtctgac gacactgctg tctattactg tgcaagggat 360

cccaaccggc ggagttggta ttacggaatg gatgtctggg cccagggtac taccgtcacg 420

gtgtcttctg gcggcggggg ctcaggagga ggaggcagcg gtggaggagg cagcgatatt 480

cagatgacac aaagcccttc tagtctctcc gcaagcgttg gcgaccgcgt gaccattacg 540

tgtcaggctt cacaagatat tcgaaactac ctgaactggt atcagcagaa gcccggcaaa 600

gcacctaagc tgctgattta tgacgctagc aaccttgaga ctggcgtccc ctccagattt 660

tccggcagcg gctcaggcac cgactttact tttaccatct ccacactcca gccagaagat 720

attgcaacgt attactgcca acattatgat aacctgcctt tgaccttcgg aggtggcacc 780

aaggtagaga tcagaagagc cgctgccctt gataatgaaa agtcaaacgg aacaatcatt 840

cacgtgaagg gcaagcacct ctgtccgtca cccttgttcc ctggtccatc caagccattc 900

tgggtgttgg tcgtagtggg tggagtcctc gcttgttact ctctgctcgt caccgtggct 960

tttataatct tctgggttag atccaaaaga agccgcctgc tccatagcga ttacatgaat 1020

atgactccac gccgccctgg ccccacaagg aaacactacc agccttacgc accacctaga 1080

gatttcgctg cctatcggag ccgagtgaaa ttttctagat cagctgatgc tcccgcctat 1140

cagcagggac agaatcaact ttacaatgag ctgaacctgg gtcgcagaga agagtacgac 1200

gttttggaca aacgccgggg ccgagatcct gagatggggg ggaagccgag aaggaagaat 1260

cctcaagaag gcctgtacaa cgagcttcaa aaagacaaaa tggctgaggc gtactctgag 1320

atcggcatga agggcgagcg gagacgaggc aagggtcacg atggcttgta tcagggcctg 1380

agtacagcca caaaggacac ctatgacgcc ctccacatgc aggcactgcc cccacgctag 1440

<210> 24
<211> 479
<212> PRT
<213> Artificial Sequence

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

<400> 24
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

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

Lys Arg Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Gly Tyr Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

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

Tyr Ala Gln Lys Phe Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser
85 90 95

Ile Ser Thr Ala Tyr Met Glu Val Asn Arg Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Asp Pro Asn Arg Arg Ser Trp Tyr Tyr
115 120 125

```
Gly Met Asp Val Trp Ala Gln Gly Thr Thr Val Thr Val Ser Ser Gly
    130                 135                 140

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile
145                 150                 155                 160

Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg
                165                 170                 175

Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Arg Asn Tyr Leu Asn
            180                 185                 190

Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Asp
        195                 200                 205

Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly Ser Gly
    210                 215                 220

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

Ile Ala Thr Tyr Tyr Cys Gln His Tyr Asp Asn Leu Pro Leu Thr Phe
                245                 250                 255

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

Glu Lys Ser Asn Gly Thr Ile Ile His Val Lys Gly Lys His Leu Cys
        275                 280                 285

Pro Ser Pro Leu Phe Pro Gly Pro Ser Lys Pro Phe Trp Val Leu Val
    290                 295                 300

Val Val Gly Gly Val Leu Ala Cys Tyr Ser Leu Leu Val Thr Val Ala
305                 310                 315                 320

Phe Ile Ile Phe Trp Val Arg Ser Lys Arg Ser Arg Leu Leu His Ser
```

325 330 335

Asp Tyr Met Asn Met Thr Pro Arg Arg Pro Gly Pro Thr Arg Lys His
340 345 350

Tyr Gln Pro Tyr Ala Pro Pro Arg Asp Phe Ala Ala Tyr Arg Ser Arg
355 360 365

Val Lys Phe Ser Arg Ser Ala Asp Ala Pro Ala Tyr Gln Gln Gly Gln
370 375 380

Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu Glu Tyr Asp
385 390 395 400

Val Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu Met Gly Gly Lys Pro
405 410 415

Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu Gln Lys Asp
420 425 430

Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly Glu Arg Arg
435 440 445

Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly Leu Ser Thr Ala Thr
450 455 460

Lys Asp Thr Tyr Asp Ala Leu His Met Gln Ala Leu Pro Pro Arg
465 470 475

<210> 25
<211> 1437
<212> DNA
<213> Artificial Sequence

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

<400> 25

atggcactcc ccgtaactgc tctgctgctg ccgttggcat tgctcctgca cgccgcacgc 60

ccgcaagtgc agttggtgca gtctggagct gaagtgaaga aaccaggcgc tagcgtcaaa 120

gtgagctgta aggcctcagg ttacacgttt actgggtact atatgcattg ggtcaggcaa 180

gcccctggcc agggcctcga gtggatgggc tggattaatc ctaacagcgg ggacacaagc 240

tatgcccaac gcttcctggg cagagtaaca atgacacggg atacaagtat taacaccgtc 300

catatggaac tctctcggct cggctcagat gataccgcgg tttattactg tgctagggag 360

gacgactcct cttggtatgg cagcttcgat tattgggggc agggaaccct ggtgacagtc 420

tcatctggtg gagggggctc cgggggtggg ggcagcggag ggggaggttc tgatatacag 480

atgactcaga gtccctcaag cttgagtgcc agtgtaggcg accgggtgac gataacctgt 540

agggcttcac agggaatcag aaattatctg ggttggtacc agcagaagcc aggaaaggca 600

cctaaaagac ttatttacgc cgcatcctcc ttgcagtccg gcgtgccatc aaaattttct 660

gggagcggct ctggaaccga gttcaccctc acgatctcca gcctccagcc cgaggacttt 720

gccacctact attgcctgca gcacgatagt gatctgcgaa cttttgggca aggcactaaa 780

gtggaaatta agagagccgc tgcccttgat aatgaaaagt caaacggaac aatcattcac 840

gtgaagggca agcacctctg tccgtcaccc ttgttccctg gtccatccaa gccattctgg 900

gtgttggtcg tagtgggtgg agtcctcgct tgttactctc tgctcgtcac cgtggctttt 960

ataatcttct gggttagatc caaaagaagc cgcctgctcc atagcgatta catgaatatg 1020

actccacgcc gccctggccc cacaaggaaa cactaccagc cttacgcacc acctagagat 1080

ttcgctgcct atcggagccg agtgaaattt tctagatcag ctgatgctcc cgcctatcag 1140

cagggacaga atcaacttta caatgagctg aacctgggtc gcagagaaga gtacgacgtt 1200

ttggacaaac gccggggccg agatcctgag atgggggga agccgagaag gaagaatcct 1260

caagaaggcc tgtacaacga gcttcaaaaa gacaaaatgg ctgaggcgta ctctgagatc 1320

ggcatgaagg gcgagcggag acgaggcaag ggtcacgatg gcttgtatca gggcctgagt 1380

acagccacaa aggacaccta tgacgccctc cacatgcagg cactgccccc acgctag 1437

<210> 26
<211> 478
<212> PRT
<213> Artificial Sequence

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

<400> 26

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                  10                  15


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


Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
        35                  40                  45


Thr Phe Thr Gly Tyr Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln
    50                  55                  60


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


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


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


Ala Val Tyr Tyr Cys Ala Arg Glu Asp Asp Ser Ser Trp Tyr Gly Ser
        115                 120                 125


Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly
    130                 135                 140


Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln
```

145 150 155 160

Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val
165 170 175

Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Arg Asn Tyr Leu Gly Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Arg Leu Ile Tyr Ala Ala
195 200 205

Ser Ser Leu Gln Ser Gly Val Pro Ser Lys Phe Ser Gly Ser Gly Ser
210 215 220

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

Ala Thr Tyr Tyr Cys Leu Gln His Asp Ser Asp Leu Arg Thr Phe Gly
245 250 255

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

Lys Ser Asn Gly Thr Ile Ile His Val Lys Gly Lys His Leu Cys Pro
275 280 285

Ser Pro Leu Phe Pro Gly Pro Ser Lys Pro Phe Trp Val Leu Val Val
290 295 300

Val Gly Gly Val Leu Ala Cys Tyr Ser Leu Leu Val Thr Val Ala Phe
305 310 315 320

Ile Ile Phe Trp Val Arg Ser Lys Arg Ser Arg Leu Leu His Ser Asp
325 330 335

Tyr Met Asn Met Thr Pro Arg Arg Pro Gly Pro Thr Arg Lys His Tyr
340 345 350

Gln Pro Tyr Ala Pro Pro Arg Asp Phe Ala Ala Tyr Arg Ser Arg Val
355 360 365

Lys Phe Ser Arg Ser Ala Asp Ala Pro Ala Tyr Gln Gln Gly Gln Asn
370 375 380

Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu Glu Tyr Asp Val
385 390 395 400

Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu Met Gly Gly Lys Pro Arg
405 410 415

Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu Gln Lys Asp Lys
420 425 430

Met Ala Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly Glu Arg Arg Arg
435 440 445

Gly Lys Gly His Asp Gly Leu Tyr Gln Gly Leu Ser Thr Ala Thr Lys
450 455 460

Asp Thr Tyr Asp Ala Leu His Met Gln Ala Leu Pro Pro Arg
465 470 475

<210> 27
<211> 1455
<212> DNA
<213> Artificial Sequence

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

<400> 27
atggcactcc ccgtaactgc tctgctgctg ccgttggcat tgctcctgca cgccgcacgc 60

ccgcaagtgc agttggtgca gtctggagct gaagtgaaga aaccaggcgc tagcgtcaaa 120

gtgagctgta aggcctcagg ttacacgttt actgggtact atatgcattg ggtcaggcaa 180

gcccctggcc agggcctcga gtggatgggc tggattaatc ctaacagcgg ggacacaagc 240

tatgcccaac gcttcctggg cagagtaaca atgacacggg atacaagtat taacaccgtc 300

catatggaac tctctcggct cggctcagat gataccgcgg tttattactg tgctagggag 360

gacgactcct cttggtatgg cagcttcgat tattgggggc agggaaccct ggtgacagtc 420

tcatctggtg gaggggctc cgggggtggg ggcagcggag ggggaggttc tgatatacag 480

atgactcaga gtccctcaag cttgagtgcc agtgtaggcg accgggtgac gataacctgt 540

agggcttcac agggaatcag aaattatctg ggttggtacc agcagaagcc aggaaaggca 600

cctaaaagac ttatttacgc cgcatcctcc ttgcagtccg gcgtgccatc aaaattttct 660

gggagcggct ctggaaccga gttcaccctc acgatctcca gcctccagcc cgaggacttt 720

gccacctact attgcctgca gcacgatagt gatctgcgaa cttttgggca aggcactaaa 780

gtggaaatta agagagccgc tgcccttgat aatgaaaagt caaacggaac aatcattcac 840

gtgaagggca agcacctctg tccgtcaccc ttgttccctg gtccatccaa gccattctgg 900

gtgttggtcg tagtgggtgg agtcctcgct tgttactctc tgctcgtcac cgtggctttt 960

ataatcttct gggttcgctt ttccgtcgtt aagcgggggа gaaaaaagct gctgtacatt 1020

ttcaaacagc cgtttatgag gccggtccaa acgactcagg aagaagacgg ctgctcctgc 1080

cgctttcctg aggaggagga gggcgggtgc gaactgaggg tgaagttttc cagatctgca 1140

gatgcaccag cgtatcagca gggccagaac caactgtata acgagctcaa cctgggacgc 1200

agggaagagt atgacgtttt ggacaagcgc agaggacggg accctgagat gggtggcaaa 1260

ccaagacgaa aaaaccccca ggagggtctc tataatgagc tgcagaagga taagatggct 1320

gaagcctatt ctgaaatagg catgaaagga gagcggagaa ggggaaaagg gcacgacggt 1380

ttgtaccagg gactcagcac tgctacgaag gatacttatg acgctctcca catgcaagcc 1440

ctgccaccta ggtaa 1455

<210> 28
<211> 484

<212> PRT
<213> Artificial Sequence

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

<400> 28

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                  10                  15

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

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
        35                  40                  45

Thr Phe Thr Gly Tyr Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln
    50                  55                  60

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

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

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

Ala Val Tyr Tyr Cys Ala Arg Glu Asp Asp Ser Ser Trp Tyr Gly Ser
        115                 120                 125

Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly
    130                 135                 140

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln
145                 150                 155                 160
```

```
Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val
                165                 170                 175

Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Arg Asn Tyr Leu Gly Trp
            180                 185                 190

Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Arg Leu Ile Tyr Ala Ala
        195                 200                 205

Ser Ser Leu Gln Ser Gly Val Pro Ser Lys Phe Ser Gly Ser Gly Ser
    210                 215                 220

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

Ala Thr Tyr Tyr Cys Leu Gln His Asp Ser Asp Leu Arg Thr Phe Gly
                245                 250                 255

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

Lys Ser Asn Gly Thr Ile Ile His Val Lys Gly Lys His Leu Cys Pro
        275                 280                 285

Ser Pro Leu Phe Pro Gly Pro Ser Lys Pro Phe Trp Val Leu Val Val
    290                 295                 300

Val Gly Gly Val Leu Ala Cys Tyr Ser Leu Leu Val Thr Val Ala Phe
305                 310                 315                 320

Ile Ile Phe Trp Val Arg Phe Ser Val Val Lys Arg Gly Arg Lys Lys
                325                 330                 335

Leu Leu Tyr Ile Phe Lys Gln Pro Phe Met Arg Pro Val Gln Thr Thr
            340                 345                 350

Gln Glu Glu Asp Gly Cys Ser Cys Arg Phe Pro Glu Glu Glu Glu Gly
```

355 360 365

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

Tyr Gln Gln Gly Gln Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg
385 390 395 400

Arg Glu Glu Tyr Asp Val Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu
405 410 415

Met Gly Gly Lys Pro Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn
420 425 430

Glu Leu Gln Lys Asp Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly Met
435 440 445

Lys Gly Glu Arg Arg Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly
450 455 460

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

Leu Pro Pro Arg

<210> 29
<211> 618
<212> PRT
<213> Homo sapiens

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

Ala Leu Ile Phe Leu Pro Gln Thr Arg Pro Ala Gly Val Phe Glu Leu
20 25 30

```
Gln Ile His Ser Phe Gly Pro Gly Pro Gly Pro Gly Ala Pro Arg Ser
        35                  40                  45

Pro Cys Ser Ala Arg Leu Pro Cys Arg Leu Phe Phe Arg Val Cys Leu
    50                  55                  60

Lys Pro Gly Leu Ser Glu Glu Ala Ala Glu Ser Pro Cys Ala Leu Gly
65                  70                  75                  80

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

Pro Ala Pro Asp Leu Pro Leu Pro Asp Gly Leu Leu Gln Val Pro Phe
            100                 105                 110

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

Glu Glu Leu Gly Asp Gln Ile Gly Gly Pro Ala Trp Ser Leu Leu Ala
    130                 135                 140

Arg Val Ala Gly Arg Arg Arg Leu Ala Ala Gly Gly Pro Trp Ala Arg
145                 150                 155                 160

Asp Ile Gln Arg Ala Gly Ala Trp Glu Leu Arg Phe Ser Tyr Arg Ala
                165                 170                 175

Arg Cys Glu Pro Pro Ala Val Gly Thr Ala Cys Thr Arg Leu Cys Arg
            180                 185                 190

Pro Arg Ser Ala Pro Ser Arg Cys Gly Pro Gly Leu Arg Pro Cys Ala
        195                 200                 205

Pro Leu Glu Asp Glu Cys Glu Ala Pro Leu Val Cys Arg Ala Gly Cys
    210                 215                 220

Ser Pro Glu His Gly Phe Cys Glu Gln Pro Gly Glu Cys Arg Cys Leu
```

225 230 235 240

Glu Gly Trp Thr Gly Pro Leu Cys Thr Val Pro Val Ser Thr Ser Ser
245 250 255

Cys Leu Ser Pro Arg Gly Pro Ser Ser Ala Thr Thr Gly Cys Leu Val
260 265 270

Pro Gly Pro Gly Pro Cys Asp Gly Asn Pro Cys Ala Asn Gly Gly Ser
275 280 285

Cys Ser Glu Thr Pro Arg Ser Phe Glu Cys Thr Cys Pro Arg Gly Phe
290 295 300

Tyr Gly Leu Arg Cys Glu Val Ser Gly Val Thr Cys Ala Asp Gly Pro
305 310 315 320

Cys Phe Asn Gly Gly Leu Cys Val Gly Gly Ala Asp Pro Asp Ser Ala
325 330 335

Tyr Ile Cys His Cys Pro Pro Gly Phe Gln Gly Ser Asn Cys Glu Lys
340 345 350

Arg Val Asp Arg Cys Ser Leu Gln Pro Cys Arg Asn Gly Gly Leu Cys
355 360 365

Leu Asp Leu Gly His Ala Leu Arg Cys Arg Cys Arg Ala Gly Phe Ala
370 375 380

Gly Pro Arg Cys Glu His Asp Leu Asp Asp Cys Ala Gly Arg Ala Cys
385 390 395 400

Ala Asn Gly Gly Thr Cys Val Glu Gly Gly Gly Ala His Arg Cys Ser
405 410 415

Cys Ala Leu Gly Phe Gly Gly Arg Asp Cys Arg Glu Arg Ala Asp Pro
420 425 430

```
Cys Ala Ala Arg Pro Cys Ala His Gly Gly Arg Cys Tyr Ala His Phe
        435                 440                 445

Ser Gly Leu Val Cys Ala Cys Ala Pro Gly Tyr Met Gly Ala Arg Cys
    450                 455                 460

Glu Phe Pro Val His Pro Asp Gly Ala Ser Ala Leu Pro Ala Ala Pro
465                 470                 475                 480

Pro Gly Leu Arg Pro Gly Asp Pro Gln Arg Tyr Leu Leu Pro Pro Ala
                485                 490                 495

Leu Gly Leu Leu Val Ala Ala Gly Val Ala Gly Ala Ala Leu Leu Leu
            500                 505                 510

Val His Val Arg Arg Arg Gly His Ser Gln Asp Ala Gly Ser Arg Leu
        515                 520                 525

Leu Ala Gly Thr Pro Glu Pro Ser Val His Ala Leu Pro Asp Ala Leu
    530                 535                 540

Asn Asn Leu Arg Thr Gln Glu Gly Ser Gly Asp Gly Pro Ser Ser Ser
545                 550                 555                 560

Val Asp Trp Asn Arg Pro Glu Asp Val Asp Pro Gln Gly Ile Tyr Val
                565                 570                 575

Ile Ser Ala Pro Ser Ile Tyr Ala Arg Glu Val Ala Thr Pro Leu Phe
            580                 585                 590

Pro Pro Leu His Thr Gly Arg Ala Gly Gln Arg Gln His Leu Leu Phe
        595                 600                 605

Pro Tyr Pro Ser Ser Ile Leu Ser Val Lys
    610                 615
```

<210> 30
<211> 587
<212> PRT
<213> Homo sapiens

<400> 30
Met Val Ser Pro Arg Met Ser Gly Leu Leu Ser Gln Thr Val Ile Leu
1 5 10 15

Ala Leu Ile Phe Leu Pro Gln Thr Arg Pro Ala Gly Val Phe Glu Leu
20 25 30

Gln Ile His Ser Phe Gly Pro Gly Pro Gly Pro Gly Ala Pro Arg Ser
35 40 45

Pro Cys Ser Ala Arg Leu Pro Cys Arg Leu Phe Phe Arg Val Cys Leu
50 55 60

Lys Pro Gly Leu Ser Glu Glu Ala Ala Glu Ser Pro Cys Ala Leu Gly
65 70 75 80

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

Pro Ala Pro Asp Leu Pro Leu Pro Asp Gly Leu Leu Gln Val Pro Phe
100 105 110

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

Glu Glu Leu Gly Asp Gln Ile Gly Gly Pro Ala Trp Ser Leu Leu Ala
130 135 140

Arg Val Ala Gly Arg Arg Arg Leu Ala Ala Gly Gly Pro Trp Ala Arg
145 150 155 160

Asp Ile Gln Arg Ala Gly Ala Trp Glu Leu Arg Phe Ser Tyr Arg Ala
165 170 175

```
Arg Cys Glu Pro Pro Ala Val Gly Thr Ala Cys Thr Arg Leu Cys Arg
            180                 185                 190

Pro Arg Ser Ala Pro Ser Arg Cys Gly Pro Gly Leu Arg Pro Cys Ala
        195                 200                 205

Pro Leu Glu Asp Glu Cys Glu Ala Pro Leu Val Cys Arg Ala Gly Cys
    210                 215                 220

Ser Pro Glu His Gly Phe Cys Glu Gln Pro Gly Glu Cys Arg Cys Leu
225                 230                 235                 240

Glu Gly Trp Thr Gly Pro Leu Cys Thr Val Pro Val Ser Thr Ser Ser
                245                 250                 255

Cys Leu Ser Pro Arg Gly Pro Ser Ser Ala Thr Thr Gly Cys Leu Val
            260                 265                 270

Pro Gly Pro Gly Pro Cys Asp Gly Asn Pro Cys Ala Asn Gly Gly Ser
        275                 280                 285

Cys Ser Glu Thr Pro Arg Ser Phe Glu Cys Thr Cys Pro Arg Gly Phe
    290                 295                 300

Tyr Gly Leu Arg Cys Glu Val Ser Gly Val Thr Cys Ala Asp Gly Pro
305                 310                 315                 320

Cys Phe Asn Gly Gly Leu Cys Val Gly Gly Ala Asp Pro Asp Ser Ala
                325                 330                 335

Tyr Ile Cys His Cys Pro Pro Gly Phe Gln Gly Ser Asn Cys Glu Lys
            340                 345                 350

Arg Val Asp Arg Cys Ser Leu Gln Pro Cys Arg Asn Gly Gly Leu Cys
        355                 360                 365
```

```
Leu Asp Leu Gly His Ala Leu Arg Cys Arg Cys Arg Ala Gly Phe Ala
    370                 375                 380

Gly Pro Arg Cys Glu His Asp Leu Asp Asp Cys Ala Gly Arg Ala Cys
385                 390                 395                 400

Ala Asn Gly Gly Thr Cys Val Glu Gly Gly Gly Ala His Arg Cys Ser
                405                 410                 415

Cys Ala Leu Gly Phe Gly Gly Arg Asp Cys Arg Glu Arg Ala Asp Pro
            420                 425                 430

Cys Ala Ala Arg Pro Cys Ala His Gly Gly Arg Cys Tyr Ala His Phe
        435                 440                 445

Ser Gly Leu Val Cys Ala Cys Ala Pro Gly Tyr Met Gly Ala Arg Cys
    450                 455                 460

Glu Phe Pro Val His Pro Asp Gly Ala Ser Ala Leu Pro Ala Ala Pro
465                 470                 475                 480

Pro Gly Leu Arg Pro Gly Asp Pro Gln Arg Tyr Leu Leu Pro Pro Ala
                485                 490                 495

Leu Gly Leu Leu Val Ala Ala Gly Val Ala Gly Ala Ala Leu Leu Leu
            500                 505                 510

Val His Val Arg Arg Arg Gly His Ser Gln Asp Ala Gly Ser Arg Leu
        515                 520                 525

Leu Ala Gly Thr Pro Glu Pro Ser Val His Ala Leu Pro Asp Ala Leu
    530                 535                 540

Asn Asn Leu Arg Thr Gln Glu Gly Ser Gly Asp Gly Pro Ser Ser Ser
545                 550                 555                 560
```

Val Asp Trp Asn Arg Pro Glu Asp Val Asp Pro Gln Gly Ile Tyr Val
565 570 575

Ile Ser Ala Pro Ser Ile Tyr Ala Arg Glu Ala
580 585

<210> 31
<211> 63
<212> DNA
<213> Artificial Sequence

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

<400> 31
atggcactcc ccgtaactgc tctgctgctg ccgttggcat tgctcctgca cgccgcacgc 60

ccg 63

<210> 32
<211> 21
<212> PRT
<213> Artificial Sequence

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

<400> 32
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro
20

<210> 33
<211> 45
<212> DNA
<213> Artificial Sequence

<220>

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

<400> 33
ggcggtggag gctccggagg ggggggctct ggcggagggg gctcc 45

<210> 34
<211> 15
<212> PRT
<213> Artificial Sequence

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

<400> 34
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
1 5 10 15

<210> 35
<211> 54
<212> DNA
<213> Artificial Sequence

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

<400> 35
gggtctacat ccggctccgg gaagcccgga agtggcgaag gtagtacaaa gggg 54

<210> 36
<211> 18
<212> PRT
<213> Artificial Sequence

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

<400> 36
Gly Ser Thr Ser Gly Ser Gly Lys Pro Gly Ser Gly Glu Gly Ser Thr

1 5 10 15

Lys Gly

<210> 37
<211> 126
<212> DNA
<213> Artificial Sequence

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

<400> 37
aagcggggga gaaaaaagct gctgtacatt ttcaaacagc cgtttatgag gccggtccaa 60

acgactcagg aagaagacgg ctgctcctgc cgctttcctg aggaggagga gggcgggtgc 120

gaactg 126

<210> 38
<211> 42
<212> PRT
<213> Artificial Sequence

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

<400> 38
Lys Arg Gly Arg Lys Lys Leu Leu Tyr Ile Phe Lys Gln Pro Phe Met
1 5 10 15

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

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

<210> 39

<211> 37
<212> PRT
<213> Artificial Sequence

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

<400> 39
Arg Arg Asp Gln Arg Leu Pro Pro Asp Ala His Lys Pro Pro Gly Gly
1 5 10 15

Gly Ser Phe Arg Thr Pro Ile Gln Glu Glu Gln Ala Asp Ala His Ser
20 25 30

Thr Leu Ala Lys Ile
35

<210> 40
<211> 354
<212> DNA
<213> Artificial Sequence

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

<400> 40
caggtgcaac tgcaggaaag cgggcccggt ctggtgaagc cctcagaaac gctctccctc 60

acctgtacag tctctggcga ttcaatctct tcatattact ggacgtggat caggcagcct 120

cccggcaagg gactggagtg gatcggatat atctactata gtggcaccac taactataat 180

ccttccctga aaagccgggt gacaatctct gttgacacct ccaagagcca gttcagcctg 240

aaactctcca gtgtgacagc cgccgataca gccgtgtatt actgtgcctc tatcgctgtg 300

cgcgggttct tttttgatta ttggggccag gggacactgg tgaccgttag cagc 354

<210> 41
<211> 118
<212> PRT

<213> Artificial Sequence

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

<400> 41

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

<210> 42
<211> 5
<212> PRT
<213> Artificial Sequence

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

<400> 42
Ser Tyr Tyr Trp Thr
1 5

<210> 43
<211> 16
<212> PRT
<213> Artificial Sequence

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

<400> 43
Tyr Ile Tyr Tyr Ser Gly Thr Thr Asn Tyr Asn Pro Ser Leu Lys Ser
1 5 10 15

<210> 44
<211> 10
<212> PRT
<213> Artificial Sequence

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

<400> 44
Ile Ala Val Arg Gly Phe Phe Phe Asp Tyr
1 5 10

<210> 45
<211> 327
<212> DNA
<213> Artificial Sequence

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

<400> 45
gaaattgtac tgacccagtc ccccggcacg ctctctctct ccccagggga aagggcaacc 60

cttagctgcc gggcgagcca gagcgtgagt tcctcctacc tcgcgtggta tcagcagaag 120

cctggacagg ctcccagact gctgatttac ggggcttcta cgagagccac cggcatacct 180

gataggttct ctggctccgg gtctgggacc gactttactc ttacaatcag cagacttgag 240

cctgaagact tcgctgtgta ttattgtcaa caatacggaa cgtcccccct tacctttggt 300

ggcgggacaa aagtggaaat taagagg 327

<210> 46
<211> 109
<212> PRT
<213> Artificial Sequence

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

<400> 46

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 Ser Gln Ser Val Ser Ser Ser
20 25 30

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

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

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

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

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

<210> 47
<211> 12
<212> PRT
<213> Artificial Sequence

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

<400> 47
Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala
1 5 10

<210> 48
<211> 7
<212> PRT
<213> Artificial Sequence

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

<400> 48
Gly Ala Ser Thr Arg Ala Thr
1 5

<210> 49
<211> 9
<212> PRT
<213> Artificial Sequence

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

<400> 49
Gln Gln Tyr Gly Thr Ser Pro Leu Thr
1 5

<210> 50
<211> 366
<212> DNA

<213> Artificial Sequence

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

<400> 50
caggtccagc tggtgcagtc tggggcagag gtgaaacggc cgggtgcaag cgtgaaggtg 60

tcctgcaaag cctctggcta tacctttact gggtactata tgcactgggt tcggcaggcg 120

ccaggacagg gtcttgagtg gatgggttgg attgatccaa actctggcga tacaaattac 180

gcacagaaat tccagggccg cgtgacgatg actcgagaca cttccatatc caccgcctat 240

atggaagtga atagactccg gtctgacgac actgctgtct attactgtgc aagggatccc 300

aaccggcgga gttggtatta cggaatggat gtctgggccc agggtactac cgtcacggtg 360

tcttct 366

<210> 51
<211> 122
<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 Ala Glu Val Lys Arg Pro Gly Ala
1 5 10 15

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

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

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

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


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


Ala Arg Asp Pro Asn Arg Arg Ser Trp Tyr Tyr Gly Met Asp Val Trp
            100                 105                 110


Ala Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120


<210> 52
<211> 5
<212> PRT
<213> Artificial Sequence

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

<400> 52
Gly Tyr Tyr Met His
1               5


<210> 53
<211> 17
<212> PRT
<213> Artificial Sequence

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

<400> 53
Trp Ile Asp Pro Asn Ser Gly Asp Thr Asn Tyr Ala Gln Lys Phe Gln
1               5                   10                  15


Gly
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<210> 54
<211> 13
<212> PRT
<213> Artificial Sequence

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

<400> 54
Asp Pro Asn Arg Arg Ser Trp Tyr Tyr Gly Met Asp Val
1 5 10

<210> 55
<211> 735
<212> DNA
<213> Artificial Sequence

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

<400> 55
caggtccagc tggtgcagtc tggggcagag gtgaaacggc cgggtgcaag cgtgaaggtg 60

tcctgcaaag cctctggcta tacctttact gggtactata tgcactgggt tcggcaggcg 120

ccaggacagg gtcttgagtg gatgggttgg attgatccaa actctggcga tacaaattac 180

gcacagaaat tccagggccg cgtgacgatg actcgagaca cttccatatc caccgcctat 240

atggaagtga atagactccg gtctgacgac actgctgtct attactgtgc aagggatccc 300

aaccggcgga gttggtatta cggaatggat gtctgggccc agggtactac cgtcacggtg 360

tcttctggcg gcgggggctc aggaggagga ggcagcggtg gaggaggcag cgatattcag 420

atgacacaaa gcccttctag tctctccgca agcgttggcg accgcgtgac cattacgtgt 480

caggcttcac aagatattcg aaactacctg aactggtatc agcagaagcc cggcaaagca 540

cctaagctgc tgatttatga cgctagcaac cttgagactg gcgtcccctc cagattttcc 600

ggcagcggct caggcaccga ctttactttt accatctcca cactccagcc agaagatatt 660

gcaacgtatt actgccaaca ttatgataac ctgcctttga ccttcggagg tggcaccaag 720

gtagagatca gaaga 735

<210> 56
<211> 108
<212> PRT
<213> Artificial Sequence

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

<400> 56
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

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

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

Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

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

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

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Arg Arg
100 105

<210> 57
<211> 11
<212> PRT
<213> Artificial Sequence

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

<400> 57
Gln Ala Ser Gln Asp Ile Arg Asn Tyr Leu Asn
1 5 10

<210> 58
<211> 7
<212> PRT
<213> Artificial Sequence

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

<400> 58
Asp Ala Ser Asn Leu Glu Thr
1 5

<210> 59
<211> 10
<212> PRT
<213> Artificial Sequence

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

<400> 59
Gln His Tyr Asp Asn Leu Pro Leu Thr Phe
1 5 10

<210> 60
<211> 363
<212> DNA
<213> Artificial Sequence

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

polynucleotide"

<400> 60
caagtgcagt tggtgcagtc tggagctgaa gtgaagaaac caggcgctag cgtcaaagtg 60

agctgtaagg cctcaggtta cacgtttact gggtactata tgcattgggt caggcaagcc 120

cctggccagg gcctcgagtg gatgggctgg attaatccta acagcgggga cacaagctat 180

gcccaacgct tcctgggcag agtaacaatg acacgggata caagtattaa caccgtccat 240

atggaactct ctcggctcgg ctcagatgat accgcggttt attactgtgc tagggaggac 300

gactcctctt ggtatggcag cttcgattat tgggggcagg gaaccctggt gacagtctca 360

tct 363

<210> 61
<211> 121
<212> PRT
<213> Artificial Sequence

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

<400> 61
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 Gly Tyr
20 25 30

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

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

Leu Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ile Asn Thr Val His
65 70 75 80

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

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

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 62
<211> 5
<212> PRT
<213> Artificial Sequence

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

<400> 62
Gly Tyr Tyr Met His
1 5

<210> 63
<211> 17
<212> PRT
<213> Artificial Sequence

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

<400> 63
Trp Ile Asn Pro Asn Ser Gly Asp Thr Ser Tyr Ala Gln Arg Phe Leu
1 5 10 15

Gly

<210> 64
<211> 12
<212> PRT

<213> Artificial Sequence

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

<400> 64
Glu Asp Asp Ser Ser Trp Tyr Gly Ser Phe Asp Tyr
1 5 10

<210> 65
<211> 324
<212> DNA
<213> Artificial Sequence

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

<400> 65
gatatacaga tgactcagag tccctcaagc ttgagtgcca gtgtaggcga ccgggtgacg 60

ataacctgta gggcttcaca gggaatcaga aattatctgg gttggtacca gcagaagcca 120

ggaaaggcac ctaaaagact tatttacgcc gcatcctcct tgcagtccgg cgtgccatca 180

aaattttctg ggagcggctc tggaaccgag ttcaccctca cgatctccag cctccagccc 240

gaggactttg ccacctacta ttgcctgcag cacgatagtg atctgcgaac ttttgggcaa 300

ggcactaaag tggaaattaa gaga 324

<210> 66
<211> 108
<212> PRT
<213> Artificial Sequence

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

<400> 66
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

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

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

Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Lys Phe Ser Gly
50 55 60

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

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

Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg
100 105

<210> 67
<211> 11
<212> PRT
<213> Artificial Sequence

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

<400> 67
Arg Ala Ser Gln Gly Ile Arg Asn Tyr Leu Gly
1 5 10

<210> 68
<211> 7
<212> PRT
<213> Artificial Sequence

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

peptide"

<400> 68
Ala Ala Ser Ser Leu Gln Ser
1 5

<210> 69
<211> 10
<212> PRT
<213> Artificial Sequence

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

<400> 69
Leu Gln His Asp Ser Asp Leu Arg Thr Phe
1 5 10

<210> 70
<211> 6762
<212> DNA
<213> Artificial Sequence

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

<400> 70
ctgacgcgcc ctgtagcggc gcattaagcg cggcgggtgt ggtggttacg cgcagcgtga 60

ccgctacact tgccagcgcc ctagcgcccg ctcctttcgc tttcttccct tcctttctcg 120

ccacgttcgc cggctttccc cgtcaagctc taaatcgggg gctcccttta gggttccgat 180

ttagtgcttt acggcacctc gaccccaaaa aacttgatta gggtgatggt tcacgtagtg 240

ggccatcgcc ctgatagacg gtttttcgcc ctttgacgtt ggagtccacg ttctttaata 300

gtggactctt gttccaaact ggaacaacac tcaaccctat ctcggtctat tcttttgatt 360

tataagggat tttgccgatt tcggcctatt ggttaaaaaa tgagctgatt taacaaaaat 420

ttaacgcgaa ttttaacaaa atattaacgc ttacaatttg ccattcgcca ttcaggctgc 480

gcaactgttg ggaagggcga tcggtgcggg cctcttcgct attacgccag ctggcgaaag 540

ggggatgtgc tgcaaggcga ttaagttggg taacgccagg gttttcccag tcacgacgtt 600

gtaaaacgac ggccagtgaa ttgtaatacg actcactata gggcgacccg gggatggcgc 660

gccagtaatc aattacgggg tcattagttc atagcccata tatggagttc cgcgttacat 720

aacttacggt aaatggcccg cctggctgac cgcccaacga cccccgccca ttgacgtcaa 780

taatgacgta tgttcccata gtaacgccaa tagggacttt ccattgacgt caatgggtgg 840

agtatttacg gtaaactgcc cacttggcag tacatcaagt gtatcatatg ccaagtacgc 900

cccctattga cgtcaatgac ggtaaatggc ccgcctggca ttatgcccag tacatgacct 960

tatgggactt tcctacttgg cagtacatct acgtattagt catcgctatt accatgctga 1020

tgcggttttg gcagtacatc aatgggcgtg gatagcggtt tgactcacgg ggatttccaa 1080

gtctccaccc cattgacgtc aatgggagtt tgttttggca ccaaaatcaa cgggactttc 1140

caaaatgtcg taacaactcc gccccattga cgcaaatggg cggtaggcgt gtacggtggg 1200

aggtctatat aagcagagct ggtttagtga accggggtct ctctggttag accagatctg 1260

agcctgggag ctctctggct aactagggaa cccactgctt aagcctcaat aaagcttgcc 1320

ttgagtgctt caagtagtgt gtgcccgtct gttgtgtgac tctggtaact agagatccct 1380

cagacccttt tagtcagtgt ggaaaatctc tagcagtggc gcccgaacag ggacttgaaa 1440

gcgaaaggga aaccagagga gctctctcga cgcaggactc ggcttgctga agcgcgcacg 1500

gcaagaggcg aggggcggcg actggtgagt acgccaaaaa ttttgactag cggaggctag 1560

aaggagagag atgggtgcga gagcgtcagt attaagcggg ggagaattag atcgcgatgg 1620

gaaaaaattc ggttaaggcc aggggggaaag aaaaaatata aattaaaaca tatagtatgg 1680

gcaagcaggg agctagaacg attcgcagtt aatcctggcc tgttagaaac atcagaaggc 1740

tgtagacaaa tactgggaca gctacaacca tcccttcaga caggatcaga agaacttaga 1800

tcattatata atacagtagc aaccctctat tgtgtgcatc aaaggataga gataaaagac 1860

accaaggaag ctttagacaa gatagaggaa gagcaaaaca aaagtaagac caccgcacag 1920

caagccgccg ctgatcttca gacctggagg aggagatatg agggacaatt ggagaagtga 1980

attatataaa tataaagtag taaaaattga accattagga gtagcaccca ccaaggcaaa 2040

gagaagagtg gtgcagagag aaaaaagagc agtgggaata ggagctttgt tccttgggtt 2100

cttgggagca gcaggaagca ctatgggcgc agcgtcaatg acgctgacgg tacaggccag 2160

acaattattg tctggtatag tgcagcagca gaacaatttg ctgagggcta ttgaggcgca 2220

acagcatctg ttgcaactca cagtctgggg catcaagcag ctccaggcaa gaatcctggc 2280

tgtggaaaga tacctaaagg atcaacagct cctggggatt tggggttgct ctggaaaact 2340

catttgcacc actgctgtgc cttggaatgc tagttggagt aataaatctc tggaacagat 2400

ttggaatcac acgacctgga tggagtggga cagagaaatt aacaattaca caagcttaat 2460

acactcctta attgaagaat cgcaaaacca gcaagaaaag aatgaacaag aattattgga 2520

attagataaa tgggcaagtt tgtggaattg gtttaacata acaaattggc tgtggtatat 2580

aaaattattc ataatgatag taggaggctt ggtaggttta agaatagttt ttgctgtact 2640

ttctatagtg aatagagtta ggcagggata ttcaccatta tcgtttcaga cccacctccc 2700

aaccccgagg ggacccgaca ggcccgaagg aatagaagaa gaaggtggag agagagacag 2760

agacagatcc attcgattag tgaacggatc tcgacggtat cggttaactt ttaaaagaaa 2820

agggggggatt gggggggtaca gtgcagggga aagaatagta gacataatag caacagacat 2880

acaaactaaa gaattacaaa aacaaattac aaaattcaaa attttatcgc gatcgcggaa 2940

tgaaagaccc cacctgtagg tttggcaagc tagcttaagt aacgccattt tgcaaggcat 3000

ggaaaataca taactgagaa tagagaagtt cagatcaagg ttaggaacag agagacagca 3060

gaatatgggc caaacaggat atctgtggta agcagttcct gccccggctc agggccaaga 3120

acagatggtc cccagatgcg gtcccgccct cagcagtttc tagagaacca tcagatgttt 3180

ccagggtgcc ccaaggacct gaaaatgacc ctgtgcctta tttgaactaa ccaatcagtt 3240

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