SEQUENCE LISTING

<110> Regeneron Pharmaceuticals, Inc.

<120> Human Antibodies to PD-L1

<130> A0029WO01

<140> To be assigned
<141> Filed herewith

<150> 61/930,582
<151> 2014-01-23

<150> 62/089,549
<151> 2014-12-09

<160> 353

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ccagggaagg ggctggagtg ggtggccaac ataaaccaag atggaactga gaaatactat 180
gtggactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ctcactgtat 240
ctgcaaatga acagcctgag agccggggac acggctgtgt attactgtgc gaatacgtat 300
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Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ala Asn Ile Asn Gln Asp Gly Thr Glu Lys Tyr Tyr Val Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65   70   75   80

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Leu Gln Met Asn Ser Leu Arg Ala Gly Asp Thr Ala Val Tyr Tyr Cys
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Ala Asn Thr Tyr Tyr Asp Phe Trp Ser Gly His Phe Asp Tyr Trp Gly
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Gln Gly Thr Leu Val Thr Val Ser Ser
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gggaaagccc ctaagctcct gatctataag gcgtctagtt tagaaagtgg ggtcccatca 180
aggttcagcg gcagtggatc tgggacagaa ttcactctca ccatcagcag cctgcagcct 240
gatgattttg caacttatta ctgccaacag tatcatagtt attcgtacac ttttggccag 300
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            20   25   30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35   40   45
Tyr Lys Ala Ser Ser Leu Glu Ser Gly Val Pro Ser Arg 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
Asp Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Tyr His Ser Tyr Ser Tyr
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Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys

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<400> 14
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ccaggcaagg ggctggagtg ggtggcagct ttatggtctg atggaagtaa taaatactat 180
gcagactccg tgaagggtcg agtcaccatc tccagagaca attccaagaa cacactgtat 240
ctgcaaatga acagcctgag agccgaggac acggctgtct attactgtgc gagagggaga 300
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Ser Leu Arg Leu Ser Cys Glu Ala Ser Gly Phe Thr Phe Ser Asn Phe
20 25 30
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Ala Ala Leu Trp Ser Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
50 55 60
Lys Gly Arg Val Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Ala Arg Gly Arg Gly Ala Pro Gly Ile Pro Ile Phe Gly Tyr Trp Gly
100 105 110
Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

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<400> 19
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<210> 20
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<220>
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<400> 20
Gly Phe Thr Phe Ser Asn Phe Gly
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<400> 21
ttatggtctg atggaagtaa taaa 24

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<400> 22
Leu Trp Ser Asp Gly Ser Asn Lys
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<210> 24
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<400> 24
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atcacttgcc gggcaagtca gggcattaga aatgatttag gctggtatca gcagaaacca 120
gggaaagccc ctaagcgcct gatctatact gcatccagtt tgcaaagtgg ggtcccatca 180
agattcagcg gcagtggatc tgggacagaa ttcactctca caatcagcag cctacagcct 240
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gggaccaagg tggcgatcaa a   321

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Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Arg Asn Asp
            20   25   30
Leu Gly Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Arg Leu Ile
        35   40   45
Tyr Thr Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg 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 Asn Ser Tyr Pro Leu
                85   90   95
Thr Phe Gly Gly Gly Thr Lys Val Ala Ile Lys
            100   105

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<400> 28
Gln Gly Ile Arg Asn Asp
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<210> 29
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<400> 29
actgcatcc 9

<210> 30
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<400> 30
Thr Ala Ser
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<210> 31
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<400> 32
Leu Gln His Asn Ser Tyr Pro Leu Thr
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<210> 33
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ccagggaagg ggctggagtg ggttggccgt attaaaagga aaactgatgg tgggacaaca 180
gactacgctg cacccgtgaa aggcagattc accatctcaa gagatgattc aaaaaatacg 240
ctgcatctgc aaatgaacag cctgaaaacc gaggacacag ccgtgtatta ctgtaccaca 300
gatgatattg tagttgtacc agctgttatg agggaatact acttcggtat ggacgtctgg 360
ggccaaggga ccacggtcac cgtctcctca   390

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Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Asn Ala
            20   25   30
Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Gly Arg Ile Lys Arg Lys Thr Asp Gly Gly Thr Thr Asp Tyr Ala Ala
    50   55   60
Pro Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr
65   70   75   80
Leu His Leu Gln Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Val Tyr
                85   90   95
Tyr Cys Thr Thr Asp Asp Ile Val Val Val Pro Ala Val Met Arg Glu
            100   105   110
Tyr Tyr Phe Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val
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Ser Ser
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<400> 35
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<210> 36
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<400> 36
Gly Phe Thr Phe Ser Asn Ala Trp
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<400> 37
attaaaagga aaactgatgg tgggacaaca 30

<210> 38
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<400> 38
Ile Lys Arg Lys Thr Asp Gly Gly Thr Thr
1 5 10

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

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<400> 39
accacagatg atattgtagt tgtaccagct gttatgaggg aatactactt cggtatggac 60
gtc 63

<210> 40
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<400> 40
Thr Thr Asp Asp Ile Val Val Val Pro Ala Val Met Arg Glu Tyr Tyr
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Phe Gly Met Asp Val
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atcacttgcc ggacaagtca gggcattaga aatgatttag gctggtatca gcagaaacca 120
gggaaagccc ctaagcgcct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180
aggttcagcg gcagtggatc tgggacagaa ttcactctca caatcagcag cctgcagcct 240
gaagattttg caacttatta ctgtctacag cataataatt acccgtacac ttttggccag 300
gggaccaagc tggagatcaa a   321

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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 Thr Ser Gln Gly Ile Arg Asn Asp
            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 Arg 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 Asn Asn Tyr Pro Tyr
                85   90   95
Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
            100   105

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<400> 43
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<210> 44
<211> 6
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<400> 44
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<210> 45
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<212> DNA
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<400> 45
gctgcatcc 9

<210> 46
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<400> 46
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<210> 47
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<210> 48
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 1   5

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tcctgcaagg cttctggata ctccttcacc ggctactata tacactgggt gcgacaggcc 120
cctggacaag gacttgagtg gatgggatgg atcaacccta acagtggcac caaaaagtat 180
gcacacaagt ttcagggcag ggtcaccatg accagggaca cgtccatcga cacagcctac 240
atgattttga gcagtctgat atccgacgac acggccgtgt attactgtgc gagagatgag 300
gactggaact ttgggagctg gttcgactcc tggggccagg gaaccctggt caccgtctcc 360
tca   363

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<400> 50
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
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Ser Val Gln Val Ser Cys Lys Ala Ser Gly Tyr Ser Phe Thr Gly Tyr
            20   25   30
Tyr Ile 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 Thr Lys Lys Tyr Ala His Lys Phe
    50   55   60
Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ile Asp Thr Ala Tyr
65   70   75   80
Met Ile Leu Ser Ser Leu Ile Ser Asp Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Asp Glu Asp Trp Asn Phe Gly Ser Trp Phe Asp Ser Trp Gly
            100   105   110
Gln Gly Thr Leu Val Thr Val Ser Ser
        115   120

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<400> 51
ggatactcct tcaccggcta ctat 24

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<400> 52
Gly Tyr Ser Phe Thr Gly Tyr Tyr
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<210> 53
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<400> 53
atcaacccta acagtggcac caaa 24

<210> 54
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Ile Asn Pro Asn Ser Gly Thr Lys
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<210> 55
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<400> 55
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<400> 56
Ala Arg Asp Glu Asp Trp Asn Phe Gly Ser Trp Phe Asp Ser
 1   5   10

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<400> 57
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atctcctgca ggtctagtca aaccctcgta cacggtgatg gaaacacgta cttgagttgg 120
attcagcaga ggccaggcca gcctccgaga ctcctcattt ataaggtttc taatcagttc 180
tctggggtcc cagacagatt cagtggcagt ggggcaggga cagatttcac actgaaaatc 240
agcagggtgg aagctgagga tgtcgggctt tatttctgca tgcaagctac acattttccg 300
atcaccttcg gccaagggac acgactggag attaaa   336

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

<210> 59
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<212> DNA
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<220>
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<400> 59
caaaccctcg tacacggtga tggaaacacg tac   33

<210> 60
<211> 11

<212> PRT
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<220>
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<400> 60
Gln Thr Leu Val His Gly Asp Gly Asn Thr Tyr
 1   5   10

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<212> DNA
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<220>
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<400> 61
aaggtttct   9

<210> 62
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<400> 62
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<400> 63
atgcaagcta cacattttcc gatcacc   27

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<400> 64
Met Gln Ala Thr His Phe Pro Ile Thr
 1   5

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caggtacacc tggtgcagtc tggggctgag gtgaagaagc ctggggcctc agtgaaggtc 60
tcctgcaagg cttctggata caccttcacc ggctactata tacattgggt gcgacaggcc 120
cctggacacg ggcttgagtg gatgggatgg ctcaacccta atactggtac cacaaagtat 180
atacagaact ttcagggcag ggtcaccatg accagggaca cgtccagcag cacagcctac 240
atggagctga ccaggctgag atctgacgac acggccgtgt attactgtgc gagagatgag 300
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tca 363

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<400> 66
Gln Val His Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
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Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Gly Tyr
            20   25   30
Tyr Ile His Trp Val Arg Gln Ala Pro Gly His Gly Leu Glu Trp Met
        35   40   45
Gly Trp Leu Asn Pro Asn Thr Gly Thr Thr Lys Tyr Ile Gln Asn Phe
    50   55   60
Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ser Ser Thr Ala Tyr
65   70   75   80
Met Glu Leu Thr Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Asp Glu Asp Trp Asn Tyr Gly Ser Trp Phe Asp Thr Trp Gly
            100   105   110
Gln Gly Thr Leu Val Thr Val Ser Ser
        115   120

<210> 67
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<220>
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<400> 67
ggatacacct tcaccggcta ctat 24

<210> 68
<211> 8
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<220>
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<400> 68
Gly Tyr Thr Phe Thr Gly Tyr Tyr
 1   5

<210> 69
<211> 24
<212> DNA
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<220>
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<400> 69
ctcaacccta atactggtac caca   24

<210> 70
<211> 8
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<400> 70
Leu Asn Pro Asn Thr Gly Thr Thr
 1   5

<210> 71
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<400> 71
gcgagagatg aggactggaa ttatgggagc tggttcgaca cc   42

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<400> 72
Ala Arg Asp Glu Asp Trp Asn Tyr Gly Ser Trp Phe Asp Thr
 1   5   10

<210> 73
<211> 336

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 73
gatattgtaa tgacccagac tccactctcc tcacctgtca cccttggaca gccggcctcc 60
atctcctgca ggtctagtcc aagcctcgta cacagtgatg gaaacaccta cttgagttgg 120
cttcagcaga ggccaggcca gcctccaaga ctcctaattt ataagatttc taaccgattc 180
tctggggtcc cagacagatt cagtggcagt ggggcaggga cagatttcac gctgaaaatc 240
agcagggtgg aagctgagga tgtcggggtt tattactgca tgcaagctac acattttccg 300
atcaccttcg gccaagggac acgactggag attaga 336

<210> 74
<211> 112
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 74
Asp Ile Val Met Thr Gln Thr Pro Leu Ser Ser Pro Val Thr Leu Gly
 1   5   10   15
Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Pro Ser Leu Val His Ser
            20   25   30
Asp Gly Asn Thr Tyr Leu Ser Trp Leu Gln Gln Arg Pro Gly Gln Pro
        35   40   45
Pro Arg Leu Leu Ile Tyr Lys Ile Ser Asn Arg Phe Ser Gly Val Pro
    50   55   60
Asp Arg Phe Ser Gly Ser Gly Ala Gly Thr Asp Phe Thr Leu Lys Ile
65   70   75   80
Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln Ala
                85   90   95
Thr His Phe Pro Ile Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Arg
            100   105   110

<210> 75
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 75
ccaagcctcg tacacagtga tggaaacacc tac 33

<210> 76
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 76

Pro Ser Leu Val His Ser Asp Gly Asn Thr Tyr
1 5 10

<210> 77
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 77
aagatttct 9

<210> 78
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 78
Lys Ile Ser
1

<210> 79
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 79
atgcaagcta cacattttcc gatcacc 27

<210> 80
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 80
Met Gln Ala Thr His Phe Pro Ile Thr
1 5

<210> 81
<211> 360
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 81
gaggtgcagc tggtggaatc tgggggaggt gtggtgcggc ctgggggtc cctgagactc 60
tcctgtgcag cctctggatt cacttttgat gattatggca tgacctgggt ccgccaagct 120
ccagggaggg gcctggaatg ggtctctggt attcattggc atggtaaacg cacaggttat 180
gcagactctg tgaagggccg attcaccata tccagagaca acgccaagaa atccctgtat 240
ctgcaaatga acagtctgaa aggcgaggac acggccttgt atcattgtgt gaggggggga 300
atgagtacag gggactggtt cgacccctgg ggccagggaa ccctggtcat cgtctcctca 360

<210> 82
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 82
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Arg Pro Gly Gly
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20   25   30
Gly Met Thr Trp Val Arg Gln Ala Pro Gly Arg Gly Leu Glu Trp Val
        35   40   45
Ser Gly Ile His Trp His Gly Lys Arg Thr Gly Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Lys Ser Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Lys Gly Glu Asp Thr Ala Leu Tyr His Cys
                85   90   95
Val Arg Gly Gly Met Ser Thr Gly Asp Trp Phe Asp Pro Trp Gly Gln
            100   105   110
Gly Thr Leu Val Ile Val Ser Ser
        115   120

<210> 83
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 83
ggattcactt ttgatgatta tggc   24

<210> 84
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 84
Gly Phe Thr Phe Asp Asp Tyr Gly
 1   5

<210> 85
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 85
attcattggc atggtaaacg caca 24

<210> 86
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 86
Ile His Trp His Gly Lys Arg Thr
1 5

<210> 87
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 87
gtgaggggggg gaatgagtac aggggactgg ttcgacccc 39

<210> 88
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 88
Val Arg Gly Gly Met Ser Thr Gly Asp Trp Phe Asp Pro
1 5 10

<210> 89
<211> 324
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 89

gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctctaggaga cagagtcacc 60
atcacttgcc gggcaagtca gagcattaac agttatttaa attggtatca gcagaaacca 120
gggaaagccc ctaaactcct gatctatgtt gcatccagtt tgcaaagtgg ggtcccatca 180
aggttcagtg gcagtggatc tgggacagaa ttcactctca ccatcagcaa tctgcaacct 240
gaagattttg caacttacta ctgtcaacag agttacagta cccctccgat caccttcggc 300
caagggacac gactggagat taaa 324

<210> 90
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

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

<210> 91
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 91
cagagcatta acagttat 18

<210> 92
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 92
Gln Ser Ile Asn Ser Tyr
1 5

<210> 93
<211> 9
<212> DNA

<213> Artificial Sequence

<220>
<223> Synthetic

<400> 93
gttgcatcc 9

<210> 94
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 94
Val Ala Ser
 1

<210> 95
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 95
caacagagtt acagtacccc tccgatcacc 30

<210> 96
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 96
Gln Gln Ser Tyr Ser Thr Pro Pro Ile Thr
 1   5   10

<210> 97
<211> 360
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 97
gaggtgcagc tggtggagtc tgggggaggt gtggtacggc cgggggggtc cctgagactc 60
tcctgtgcag cctctggatt cacctttgat gattatggca tgacctgggt ccgccaagtt 120
ccagggaagg ggctggagtg ggtctctggt attcattgga gtggtagaag cacaggttat 180
gcagactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ctccctgtat 240
ctgcaaatga acagtctgag agccgaggac acggccttgt attactgtgc gagggggggga 300

atgagtacgg gggactggtt cgacccctgg ggccagggaa ccctggtcac cgtctcctca 360

<210> 98
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 98
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Arg Pro Gly Gly
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20   25   30
Gly Met Thr Trp Val Arg Gln Val Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Gly Ile His Trp Ser Gly Arg Ser Thr Gly Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Leu Tyr Tyr Cys
                85   90   95
Ala Arg Gly Gly Met Ser Thr Gly Asp Trp Phe Asp Pro Trp Gly Gln
            100   105   110
Gly Thr Leu Val Thr Val Ser Ser
        115   120

<210> 99
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 99
ggattcacct ttgatgatta tggc 24

<210> 100
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 100
Gly Phe Thr Phe Asp Asp Tyr Gly
 1   5

<210> 101
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 101
attcattgga gtggtagaag caca 24

<210> 102
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 102
Ile His Trp Ser Gly Arg Ser Thr
1 5

<210> 103
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 103
gcgaggggggg gaatgagtac gggggactgg ttcgacccc 39

<210> 104
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 104
Ala Arg Gly Gly Met Ser Thr Gly Asp Trp Phe Asp Pro
1 5 10

<210> 105
<211> 324
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 105
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgcc gggcaagtca gagcattagc agctatttaa attggtatca gcagaaacca 120
gggaaagccc ctaagctcct gatctatgtt gcatccagtt tgcaaagtgg ggtcccatca 180
aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 240
gaagattttg caacttacta ctgtcaacag agttacagta cccctccgat caccttcggc 300
caagggacac gactggagat taaa 324

<210> 106
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 106
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 Ser Ile Ser Ser Tyr
            20   25   30
Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35   40   45
Tyr Val Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
    50   55   60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65   70   75   80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Thr Pro Pro
                85   90   95
Ile Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
            100   105

<210> 107
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 107
cagagcatta gcagctat   18

<210> 108
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 108
Gln Ser Ile Ser Ser Tyr
 1   5

<210> 109
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 109
gttgcatcc   9

<210> 110
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 110
Val Ala Ser
 1

<210> 111
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 111
caacagagtt acagtacccc tccgatcacc 30

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

<220>
<223> Synthetic

<400> 112
Gln Gln Ser Tyr Ser Thr Pro Pro Ile Thr
 1   5   10

<210> 113
<211> 345
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 113
gaggtgcagt tggtggagtc tggaggaggc ttggtccagc ctgggggtc cctaagactc 60
tcctgtgcag cctctgggtt caccgtcggt agtaactaca tgaactgggt ccgtcaggct 120
ccagggaagg gactggagtg ggtctcagtt atttatagtg gtggtagtac atactacgca 180
gattccgtga agggccgatt caccatctcc agactcactt ccaagaacac actgtatctt 240
caaatgagca gcctgagacc tgaggacacg gccgtgtatt attgtgcgag agggattagg 300
ggtctggacg tctggggcca agggaccacg gtcaccgtct cttca 345

<210> 114
<211> 115
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 114
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Val Gly Ser Asn
            20   25   30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Val Ile Tyr Ser Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val Lys
    50   55   60
Gly Arg Phe Thr Ile Ser Arg Leu Thr Ser Lys Asn Thr Leu Tyr Leu
65   70   75   80
Gln Met Ser Ser Leu Arg Pro Glu Asp Thr Ala Val Tyr Tyr Cys Ala
                85   90   95
Arg Gly Ile Arg Gly Leu Asp Val Trp Gly Gln Gly Thr Thr Val Thr
            100   105   110
Val Ser Ser
        115

<210> 115
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 115
gggttcaccg tcggtagtaa ctac   24

<210> 116
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 116
Gly Phe Thr Val Gly Ser Asn Tyr
 1   5

<210> 117
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 117
atttatagtg gtggtagtac a   21

<210> 118
<211> 7

<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 118
Ile Tyr Ser Gly Gly Ser Thr
 1   5

<210> 119
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 119
gcgagaggga ttaggggtct ggacgtc   27

<210> 120
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 120
Ala Arg Gly Ile Arg Gly Leu Asp Val
 1   5

<210> 121
<211> 324
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 121
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgcc gggcaagtca gaccattaac atctatttaa attggtatca gcagaaacca 120
gggagagccc ctaggctcct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180
aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 240
gaagattttg caacttacta ctgtcaccag agttacagta cccctccgat caccttcggc 300
caagggacac gactggagat taaa   324

<210> 122
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 122
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 Thr Ile Asn Ile Tyr
            20   25   30
Leu Asn Trp Tyr Gln Gln Lys Pro Gly Arg Ala Pro Arg Leu Leu Ile
        35   40   45
Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
    50   55   60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65   70   75   80
Glu Asp Phe Ala Thr Tyr Tyr Cys His Gln Ser Tyr Ser Thr Pro Pro
                85   90   95
Ile Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
            100   105

<210> 123
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 123
cagaccatta acatctat 18

<210> 124
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 124
Gln Thr Ile Asn Ile Tyr
 1   5

<210> 125
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 125
gctgcatcc 9

<210> 126
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 126
Ala Ala Ser
 1

<210> 127
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 127
caccagagtt acagtacccc tccgatcacc 30

<210> 128
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 128
His Gln Ser Tyr Ser Thr Pro Pro Ile Thr
 1   5   10

<210> 129
<211> 345
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 129
gaggaacggt tggtggagtc tggaggagac ttggtccagc ctgggggtc cctgagactc 60
tcctgtgcag cctctggcat caccgtcggt actaattata tgaactgggt ccgccaggct 120
ccagggaagg gactggagtg ggtctcagtt atttctagcg gtggtaatac acactacgca 180
gactccgtga agggccgatt cattatgtcc agacaaactt ccaaaaacac gctgtatctt 240
cagatgaata gcctggaaac tgaggacacg gccgtatatt attgtgcgag ggggatcaga 300
ggtttggacg tctggggcca agggaccatg gtcaccgtct cctca 345

<210> 130
<211> 115
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 130
Glu Glu Arg Leu Val Glu Ser Gly Gly Asp Leu Val Gln Pro Gly Gly
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Ile Thr Val Gly Thr Asn
            20   25   30

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Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ser Val Ile Ser Ser Gly Gly Asn Thr His Tyr Ala Asp Ser Val Lys
    50                  55                  60
Gly Arg Phe Ile Met Ser Arg Gln Thr Ser Lys Asn Thr Leu Tyr Leu
65                  70                  75                  80
Gln Met Asn Ser Leu Glu Thr Glu Asp Thr Ala Val Tyr Tyr Cys Ala
                85                  90                  95
Arg Gly Ile Arg Gly Leu Asp Val Trp Gly Gln Gly Thr Met Val Thr
            100                 105                 110
Val Ser Ser
        115


<210> 131
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 131
ggcatcaccg tcggtactaa ttat                                          24

<210> 132
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 132
Gly Ile Thr Val Gly Thr Asn Tyr
 1               5


<210> 133
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 133
atttctagcg gtggtaatac a                                             21

<210> 134
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 134
Ile Ser Ser Gly Gly Asn Thr
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 1               5


<210> 135
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 135
gcgaggggga tcagaggttt ggacgtc                                          27

<210> 136
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 136
Ala Arg Gly Ile Arg Gly Leu Asp Val
 1               5


<210> 137
<211> 324
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 137
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgcc gggcaagtca gagcatgagc agctatttaa attggtatca gcagaaacca 120
gggagagccc ctaagctcct gatctttgct gcatccagtt tgcaaagtgg ggtcccatca 180
aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 240
gaagattttg caacttacta ctgtcaacag agttacagta cccctccgat caccttcggc 300
caagggacac gactggagat taaa                                          324

<210> 138
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 138
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 Ser Met Ser Ser Tyr
            20                  25                  30
Leu Asn Trp Tyr Gln Gln Lys Pro Gly Arg Ala Pro Lys Leu Leu Ile
        35                  40                  45
Phe Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
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    50                  55                  60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Thr Pro Pro
                85                  90                  95
Ile Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
            100                 105


<210> 139
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 139
cagagcatga gcagctat                                                  18

<210> 140
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 140
Gln Ser Met Ser Ser Tyr
 1               5


<210> 141
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 141
gctgcatcc                                                             9

<210> 142
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 142
Ala Ala Ser
 1


<210> 143
<211> 30
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<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 143
caacagagtt acagtacccc tccgatcacc 30

<210> 144
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 144
Gln Gln Ser Tyr Ser Thr Pro Pro Ile Thr
1 5 10

<210> 145
<211> 354
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 145
caggtccagc tggtgcagtc tggggctgag gtgaagatgc ctgggtcctc ggtgagggtc 60
tcctgcaagg cttctggagg catcttcagc agttctacta tcagttgggt gcgacaggcc 120
cctggacaag ggcttgaatg gatgggagag atcatccctg tctttggtac agtaaactac 180
gcacagaagt tccaggacag agtcatattt accgcggacg aatctacgac tacagcctac 240
atggagctga gcagcctgaa atctggggac acggccgtat atttctgtgc gcgaaattgg 300
ggattaggct ctttttatat ctggggccaa gggacaatgg tcaccgtctc ttca 354

<210> 146
<211> 118
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 146
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Met Pro Gly Ser
1 5 10 15
Ser Val Arg Val Ser Cys Lys Ala Ser Gly Gly Ile Phe Ser Ser Ser
20 25 30
Thr Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45
Gly Glu Ile Ile Pro Val Phe Gly Thr Val Asn Tyr Ala Gln Lys Phe
50 55 60
Gln Asp Arg Val Ile Phe Thr Ala Asp Glu Ser Thr Thr Thr Ala Tyr
65 70 75 80
Met Glu Leu Ser Ser Leu Lys Ser Gly Asp Thr Ala Val Tyr Phe Cys
85 90 95

Ala Arg Asn Trp Gly Leu Gly Ser Phe Tyr Ile Trp Gly Gln Gly Thr
100 105 110
Met Val Thr Val Ser Ser
115

<210> 147
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 147
ggaggcatct tcagcagttc tact 24

<210> 148
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 148
Gly Gly Ile Phe Ser Ser Ser Thr
1 5

<210> 149
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 149
atcatccctg tctttggtac agta 24

<210> 150
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 150
Ile Ile Pro Val Phe Gly Thr Val
1 5

<210> 151
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 151
gcgcgaaatt ggggattagg ctctttttat atc 33

<210> 152
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 152
Ala Arg Asn Trp Gly Leu Gly Ser Phe Tyr Ile
 1   5   10

<210> 153
<211> 324
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 153
gaaattgtgt tgacgcagtc tccaggcacc ctgtctttgt ctccagggga aagagccacc 60
ctctcctgca gggccagtca gagttttaac ttcaactact tagcctggta ccagcagaaa 120
cctggccagg ctcccagact cctcatctat ggtgcatcca gcagggccac tggcatccca 180
gacaggttca gtggcagtgg gtctgggaca gacttcactc tcaccatcaa caggctggag 240
cctgaagatt ttggagtgtt ttattgtcag cagtatgaaa gcgcaccttg gacgttcggc 300
caagggacca aggtggaaat caaa 324

<210> 154
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 154
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 Phe Asn Phe Asn
            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 Ser 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 Asn Arg Leu Glu
65   70   75   80
Pro Glu Asp Phe Gly Val Phe Tyr Cys Gln Gln Tyr Glu Ser Ala Pro
                85   90   95
Trp Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
            100   105

<210> 155
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 155
cagagtttta acttcaacta c 21

<210> 156
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 156
Gln Ser Phe Asn Phe Asn Tyr
1 5

<210> 157
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 157
ggtgcatcc 9

<210> 158
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 158
Gly Ala Ser
1

<210> 159
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 159
cagcagtatg aaagcgcacc ttggacg 27

<210> 160
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 160
Gln Gln Tyr Glu Ser Ala Pro Trp Thr
 1   5

<210> 161
<211> 345
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 161
gaggtgcagc ttgtagagtc tgggggagac ttggtacatc ctggcaggtc cctgagactc 60
tcctgtgcag cctctggttt ccccctttgat gagtatgcca tgcactgggt ccggcaagtt 120
ccagggaagg gcctggagtg ggtctcaggt attagttgga gtaataataa cataggctat 180
gcggactctg tgaagggccg attcaccatc tccagagaca acgccaaaaa ctccctgtat 240
ctacaaatga acagtctgag acctgaggac acggcctttt attactgtgc aaaatctgga 300
atctttgact cctggggcca gggaaccctg gtcaccgtct cctca   345

<210> 162
<211> 115
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 162
Glu Val Gln Leu Val Glu Ser Gly Gly Asp Leu Val His Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Pro Phe Asp Glu Tyr
            20   25   30
Ala Met His Trp Val Arg Gln Val Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Gly Ile Ser Trp Ser Asn Asn Asn Ile Gly Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Pro Glu Asp Thr Ala Phe Tyr Tyr Cys
                85   90   95
Ala Lys Ser Gly Ile Phe Asp Ser Trp Gly Gln Gly Thr Leu Val Thr
            100   105   110
Val Ser Ser
        115

<210> 163
<211> 24

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 163
ggtttcccct ttgatgagta tgcc 24

<210> 164
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 164
Gly Phe Pro Phe Asp Glu Tyr Ala
1 5

<210> 165
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 165
attagttgga gtaataataa cata 24

<210> 166
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 166
Ile Ser Trp Ser Asn Asn Asn Ile
1 5

<210> 167
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 167
gcaaaatctg gaatctttga ctcc 24

<210> 168
<211> 8

<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 168
Ala Lys Ser Gly Ile Phe Asp Ser
 1   5

<210> 169
<211> 315
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 169
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgcc gggcaagtca gagcattagc agctatttaa attggtatca gcagaaacca 120
gggaagctcc tgatctatgc tgcatccagt ttgcaaagtg gggtcccatc acggttcagt 180
ggcggtggat ctgggacaga tttcactctc accatcagca gtctgcgacc tgaagatttt 240
gcaacttact actgtcaaca gagttactgt acccctccga tcaccttcgg ccaagggaca 300
cgactggaga ttaaa   315

<210> 170
<211> 105
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 170
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 Ser Ile Ser Ser Tyr
            20   25   30
Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Leu Leu Ile Tyr Ala Ala
        35   40   45
Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly Gly Gly Ser
    50   55   60
Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Arg Pro Glu Asp Phe
65   70   75   80
Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Cys Thr Pro Pro Ile Thr Phe
                85   90   95
Gly Gln Gly Thr Arg Leu Glu Ile Lys
            100   105

<210> 171
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 171
cagagcatta gcagctat 18

<210> 172
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 172
Gln Ser Ile Ser Ser Tyr
1 5

<210> 173
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 173
gctgcatcc 9

<210> 174
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 174
Ala Ala Ser
1

<210> 175
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 175
caacagagtt actgtacccc tccgatcacc 30

<210> 176
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 176
Gln Gln Ser Tyr Cys Thr Pro Pro Ile Thr
 1   5   10

<210> 177
<211> 354
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 177
gaggtgcagc tggtggagtc cgggggaggc gtggtccagc ctgggaggtc cctgagactc 60
tcctgtgcag cctctggatt caccttcagt agttatggca tgcactgggt ccgccaggct 120
ccaggcaagg gactggagtg ggtgacactt atatcatatg agggaaggaa taaatactat 180
gcagactccg tgaagggccg attcaccatt tccagagaca attccaagaa cacgctgtat 240
ctgcaaatga acagcctgag agctgaggac acggctgtat attactgtgc gaaagatagg 300
acccttttacg gtatggacgt ctggggccaa ggaaccacgg tcaccgtctc ctca   354

<210> 178
<211> 118
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 178
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20   25   30
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Thr Leu Ile Ser Tyr Glu Gly Arg Asn Lys Tyr Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Lys Asp Arg Thr Leu Tyr Gly Met Asp Val Trp Gly Gln Gly Thr
            100   105   110
Thr Val Thr Val Ser Ser
        115

<210> 179
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 179
ggattcacct tcagtagtta tggc   24

<210> 180
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 180
Gly Phe Thr Phe Ser Ser Tyr Gly
 1   5

<210> 181
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 181
atatcatatg agggaaggaa taaa   24

<210> 182
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 182
Ile Ser Tyr Glu Gly Arg Asn Lys
 1   5

<210> 183
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 183
gcgaaagata ggacccttta cggtatggac gtc   33

<210> 184
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 184
Ala Lys Asp Arg Thr Leu Tyr Gly Met Asp Val

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 1               5                  10


<210> 185
<211> 363
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 185
caggtcacct tgagggagtc tggtcctgcg ctggtgaaaa ccacacagac cctcacactg 60
acctgcacct tctctgggtt ctcactcagc actaatagaa tgtgtgtgac ctggatccgt 120
cagcccccag ggaaggccct ggagtggctt gcgcgcattg attgggatgg tgttaaatac 180
tacaacacat ctctgaagac caggctcacc atctccaagg acacctccaa aaaccaggtg 240
gtccttacaa tgaccaacat ggaccctgtg gacacagcca ctttttactg tgcacggtcg 300
acttcgttga ctttttacta ctttgactac tggggccagg gaaccctggt caccgtctcc 360
tca                                                               363

<210> 186
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 186
Gln Val Thr Leu Arg Glu Ser Gly Pro Ala Leu Val Lys Thr Thr Gln
 1               5                  10                  15
Thr Leu Thr Leu Thr Cys Thr Phe Ser Gly Phe Ser Leu Ser Thr Asn
            20                  25                  30
Arg Met Cys Val Thr Trp Ile Arg Gln Pro Pro Gly Lys Ala Leu Glu
        35                  40                  45
Trp Leu Ala Arg Ile Asp Trp Asp Gly Val Lys Tyr Tyr Asn Thr Ser
    50                  55                  60
Leu Lys Thr Arg Leu Thr Ile Ser Lys Asp Thr Ser Lys Asn Gln Val
65                  70                  75                  80
Val Leu Thr Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Phe Tyr
                85                  90                  95
Cys Ala Arg Ser Thr Ser Leu Thr Phe Tyr Tyr Phe Asp Tyr Trp Gly
            100                 105                 110
Gln Gly Thr Leu Val Thr Val Ser Ser
        115                 120


<210> 187
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 187
gggttctcac tcagcactaa tagaatgtgt                                  30

<210> 188
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<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 188
Gly Phe Ser Leu Ser Thr Asn Arg Met Cys
 1   5   10

<210> 189
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 189
attgattggg atggtgttaa a   21

<210> 190
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 190
Ile Asp Trp Asp Gly Val Lys
 1   5

<210> 191
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 191
gcacggtcga cttcgttgac tttttactac tttgactac   39

<210> 192
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 192
Ala Arg Ser Thr Ser Leu Thr Phe Tyr Tyr Phe Asp Tyr
 1   5   10

<210> 193
<211> 324
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 193
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgcc gggcaagtca gagcattagc agctatttaa attggtatca gcagaaacca 120
gggaaagccc ctaagctcct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180
aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 240
gaagattttg caacttacta ctgtcaacag agttacagta cccctccgat caccttcggc 300
caagggacac gactggagat taaa 324

<210> 194
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 194
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 Ser Ile Ser Ser Tyr
            20   25   30
Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35   40   45
Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
    50   55   60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65   70   75   80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Thr Pro Pro
                85   90   95
Ile Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
            100   105

<210> 195
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 195
cagagcatta gcagctat 18

<210> 196
<211> 6
<212> PRT
<213> Artificial Sequence

<220>

<223> Synthetic

<400> 196
Gln Ser Ile Ser Ser Tyr
 1   5

<210> 197
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 197
gctgcatcc   9

<210> 198
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 198
Ala Ala Ser
 1

<210> 199
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 199
caacagagtt acagtacccc tccgatcacc   30

<210> 200
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 200
Gln Gln Ser Tyr Ser Thr Pro Pro Ile Thr
 1   5   10

<210> 201
<211> 345
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 201
gaggtgcagc tggtggagtc tggaggaggc ttggtccagc cgggggggtc cctgagactc 60
tcctgtgcag cctctgagtt caccgtcggt accaaccaca tgaactgggt ccgccaggct 120
ccagggaagg gactggagtg ggtctcagtt atttatagcg gtggtaacac attctacgca 180
gactccgtga agggccgatt caccatctcc agacacactt ccaagaacac gctgtatctt 240
caaatgaaca gcctgacagc agaggacacg gccgtatatt actgtgcgcg aggattgggg 300
ggtatggacg tctggggcca agggaccacg gtcaccgtct cctca 345

<210> 202
<211> 115
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 202
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Glu Phe Thr Val Gly Thr Asn
            20   25   30
His Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Val Ile Tyr Ser Gly Gly Asn Thr Phe Tyr Ala Asp Ser Val Lys
    50   55   60
Gly Arg Phe Thr Ile Ser Arg His Thr Ser Lys Asn Thr Leu Tyr Leu
65   70   75   80
Gln Met Asn Ser Leu Thr Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala
                85   90   95
Arg Gly Leu Gly Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr
            100   105   110
Val Ser Ser
        115

<210> 203
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 203
gagttcaccg tcggtaccaa ccac 24

<210> 204
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 204

Glu Phe Thr Val Gly Thr Asn His
1 5

<210> 205
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 205
atttatagcg gtggtaacac a 21

<210> 206
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 206
Ile Tyr Ser Gly Gly Asn Thr
1 5

<210> 207
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 207
gcgcgaggat tgggggtat ggacgtc 27

<210> 208
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 208
Ala Arg Gly Leu Gly Gly Met Asp Val
1 5

<210> 209
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 209
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgcc gggcgagtca ggtcattagc aattatttag cctggtatca gcagaaacca 120
gggaaagttc ctaggctcct gatctatgct gcatccactt tgcaatcagg ggtcccatct 180
cgtttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag cctgcagcct 240
gaagatgttg caacttatta ctgtcaaaag tataacagtg cccctcggac gttcggccaa 300
gggaccaagg tggaaatcaa a 321

<210> 210
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 210
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 Val Ile Ser Asn Tyr
            20   25   30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Val Pro Arg Leu Leu Ile
        35   40   45
Tyr Ala Ala Ser Thr Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
    50   55   60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65   70   75   80
Glu Asp Val Ala Thr Tyr Tyr Cys Gln Lys Tyr Asn Ser Ala Pro Arg
                85   90   95
Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
            100   105

<210> 211
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 211
caggtcatta gcaattat 18

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

<220>
<223> Synthetic

<400> 212
Gln Val Ile Ser Asn Tyr
 1   5

<210> 213

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

<220>
<223> Synthetic

<400> 213
gctgcatcc 9

<210> 214
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 214
Ala Ala Ser
1

<210> 215
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 215
caaaagtata acagtgcccc tcggacg 27

<210> 216
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 216
Gln Lys Tyr Asn Ser Ala Pro Arg Thr
1 5

<210> 217
<211> 360
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 217
gaggtgcagc tggtggagtc tgggggaggc ttggtccagc gggggggagtc cctgagactt 60
tactgtgcag cctctggatt cacctttagt aaatattgga tgaactgggt ccgccaggct 120
ccagggaagg ggctggagtg ggtggccaac ataaagggag atggaagtga gaaatactat 180

gtggactctg tgaagggccg gttcaccatc tccagagaca acgccaagaa ctcactatat 240
ctacaaatga acagcctgag agccgaggac acggctgttt attactgtgc gagagattat 300
tggggatcag gctactactt tgacttctgg ggccagggaa ccctggtcac cgtctcctca 360

<210> 218
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 218
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Arg Gly Glu
 1   5   10   15
Ser Leu Arg Leu Tyr Cys Ala Ala Ser Gly Phe Thr Phe Ser Lys Tyr
            20   25   30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ala Asn Ile Lys Gly Asp Gly Ser Glu Lys Tyr Tyr Val Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Asp Tyr Trp Gly Ser Gly Tyr Tyr Phe Asp Phe Trp Gly Gln
            100   105   110
Gly Thr Leu Val Thr Val Ser Ser
        115   120

<210> 219
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 219
ggattcacct ttagtaaata ttgg 24

<210> 220
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 220
Gly Phe Thr Phe Ser Lys Tyr Trp
 1   5

<210> 221
<211> 24
<212> DNA

<213> Artificial Sequence

<220>
<223> Synthetic

<400> 221
ataaagggag atggaagtga gaaa 24

<210> 222
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 222
Ile Lys Gly Asp Gly Ser Glu Lys
1 5

<210> 223
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 223
gcgagagatt attggggatc aggctactac tttgacttc 39

<210> 224
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 224
Ala Arg Asp Tyr Trp Gly Ser Gly Tyr Tyr Phe Asp Phe
1 5 10

<210> 225
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 225
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgcc gggcaagtca gaacattaac aactatttaa attggtatca gcagaaacca 120
gggaaagccc ctaaactcct gatctatgct gcatccagtt tccaaaatgc ggtcccatca 180
aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 240
gaagattttg caacttacta ctgtcaacag agttacaata ccccgctcac tttcggcggg 300

gggaccaagg tggagatcaa a 321

<210> 226
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 226
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 Asn Ile Asn 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 Ala Ala Ser Ser Phe Gln Asn Ala Val Pro Ser Arg Phe Ser Gly
    50   55   60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65   70   75   80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Asn Thr Pro Leu
                85   90   95
Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100   105

<210> 227
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 227
cagaacatta acaactat 18

<210> 228
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 228
Gln Asn Ile Asn Asn Tyr
 1   5

<210> 229
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 229
gctgcatcc 9

<210> 230
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 230
Ala Ala Ser
1

<210> 231
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 231
caacagagtt acaatacccc gctcact 27

<210> 232
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 232
Gln Gln Ser Tyr Asn Thr Pro Leu Thr
1 5

<210> 233
<211> 390
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 233
gaggtgcagc tggtggagtc tgggggaggc ttggtccagt ctgggggtc cctgagactc 60
tcctgtgcag cctctggatt cacctttagt agctattgga tgagctgggt ccgccaggct 120
ccagggaagg ggctggagtg ggtggccaac ataaagcaag atggaagtga gaaatactat 180
gtggactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ctcactgtat 240
ctgcaaatga acagcctgag agccgatgac acggctgtgt attactgtgc gagagatgat 300
attgtagtag taccagctcc tatgggatat tactactact acttcggtat ggacgtctgg 360
ggccaaggga ccacggtcac cgtctcctca 390

<210> 234
<211> 130

<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 234
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ser Gly Gly
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20   25   30
Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ala Asn Ile Lys Gln Asp Gly Ser Glu Lys Tyr Tyr Val Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Asp Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Asp Asp Ile Val Val Val Pro Ala Pro Met Gly Tyr Tyr Tyr
            100   105   110
Tyr Tyr Phe Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val
        115   120   125
Ser Ser
    130

<210> 235
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 235
ggattcacct ttagtagcta ttgg   24

<210> 236
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 236
Gly Phe Thr Phe Ser Ser Tyr Trp
 1   5

<210> 237
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 237
ataaagcaag atggaagtga gaaa 24

<210> 238
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 238
Ile Lys Gln Asp Gly Ser Glu Lys
 1 5

<210> 239
<211> 69
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 239
gcgagagatg atattgtagt agtaccagct cctatgggat attactacta ctacttcggt 60
atggacgtc 69

<210> 240
<211> 23
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 240
Ala Arg Asp Asp Ile Val Val Val Pro Ala Pro Met Gly Tyr Tyr Tyr
 1 5 10 15
Tyr Tyr Phe Gly Met Asp Val
 20

<210> 241
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 241
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgcc gggcaagtca gggcattaga aatgatttag gctggtatca gcagaaacca 120
gggaaagccc ctaagcgcct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180
aggttcagcg gcagtggatc tgggacagaa ttcactctca caatcagcag cctgcagcct 240
gaagattttg caacttatta ctgtctacag cataatagtt acccgtacac ttttggccag 300
gggaccaagc tggagatcaa a 321

<210> 242
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 242
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 Asp
            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 Arg 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 Asn Ser Tyr Pro Tyr
                85   90   95
Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
            100   105

<210> 243
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 243
cagggcatta gaaatgat 18

<210> 244
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 244
Gln Gly Ile Arg Asn Asp
 1   5

<210> 245
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 245
gctgcatcc 9

<210> 246
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 246
Ala Ala Ser
 1

<210> 247
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 247
ctacagcata atagttaccc gtacact 27

<210> 248
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 248
Leu Gln His Asn Ser Tyr Pro Tyr Thr
 1   5

<210> 249
<211> 369
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 249
gaagtgcagc tggtggagtc tgggggaggc ttggttcagc ctggcaggtc cctgagactc 60
tcctgtgcag cctctggatt cacctttgat gattttgcca tgcactgggt ccgacaagct 120
ccagggaagg gcctggagtg ggtctcaggt attagttgga ctggtggtaa catggactat 180
gcgaactctg tgaagggccg attcaccatc tccagagagg acgccaagaa ttccctgtat 240
ctgcaaatga acagtctgag agctgcggac acggccttgt attactgtgt aaaagatata 300
aggggatag tggctacggg gggggctttt gatatctggg gccgagggac aatggtcacc 360
gtctcttca 369

<210> 250
<211> 123
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 250
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Phe
            20   25   30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Gly Ile Ser Trp Thr Gly Gly Asn Met Asp Tyr Ala Asn Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Glu Asp Ala Lys Asn Ser Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Ala Asp Thr Ala Leu Tyr Tyr Cys
                85   90   95
Val Lys Asp Ile Arg Gly Ile Val Ala Thr Gly Gly Ala Phe Asp Ile
            100   105   110
Trp Gly Arg Gly Thr Met Val Thr Val Ser Ser
        115   120

<210> 251
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 251
ggattcacct ttgatgattt tgcc   24

<210> 252
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 252
Gly Phe Thr Phe Asp Asp Phe Ala
 1   5

<210> 253
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 253
attagttgga ctggtggtaa catg   24

<210> 254

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

<220>
<223> Synthetic

<400> 254
Ile Ser Trp Thr Gly Gly Asn Met
 1   5

<210> 255
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 255
gtaaaagata taaggggat agtggctacg gggggggctt ttgatatc 48

<210> 256
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 256
Val Lys Asp Ile Arg Gly Ile Val Ala Thr Gly Gly Ala Phe Asp Ile
 1   5   10   15

<210> 257
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 257
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
atctcttgcc gggcaagtca gaccattagc acttatttaa attggtttca gcagaaacca 120
gggaaagccc ctaagctcct gatctatgtt gtgtccagtt tgcaaagtgg ggtcccatca 180
aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 240
gaagattttg caacttatta ctgtcaacag agttacagta ccccattcac tttcggccct 300
gggaccaaag tggatatcaa a 321

<210> 258
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 258
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 Ser Cys Arg Ala Ser Gln Thr Ile Ser Thr Tyr
            20   25   30
Leu Asn Trp Phe Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35   40   45
Tyr Val Val Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
    50   55   60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65   70   75   80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Thr Pro Phe
                85   90   95
Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
            100   105

<210> 259
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 259
cagaccatta gcacttat 18

<210> 260
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 260
Gln Thr Ile Ser Thr Tyr
 1   5

<210> 261
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 261
gttgtgtcc 9

<210> 262
<211> 3
<212> PRT
<213> Artificial Sequence

<220>

<223> Synthetic

<400> 262
Val Val Ser
 1

<210> 263
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 263
caacagagtt acagtacccc attcact 27

<210> 264
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 264
Gln Gln Ser Tyr Ser Thr Pro Phe Thr
 1   5

<210> 265
<211> 345
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 265
gaggtgcagc tggtggagtc tggaggaggc ttggtccagc cgggggggtc cctgagactc 60
tcctgtgcag cctctggatt caccgtcggt accaactaca tgaactgggt ccgccaggct 120
ccagggaagg gactggagtg gatctcagtt atttatagcg gtggtagcac attctacgca 180
gactccgtga agggccgatt caccatctcc agacagactt cccagaacac gctgtatctt 240
caaatgaaca gcctgagacc tgaggacacg gccgtatatt actgtgcgag aggtatacgt 300
ggttttgata tctggggcca agggacaatg gtcaccgtct cttca 345

<210> 266
<211> 115
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 266
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Val Gly Thr Asn

```
            20                  25                  30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
        35                  40                  45
Ser Val Ile Tyr Ser Gly Gly Ser Thr Phe Tyr Ala Asp Ser Val Lys
    50                  55                  60
Gly Arg Phe Thr Ile Ser Arg Gln Thr Ser Gln Asn Thr Leu Tyr Leu
65                  70                  75                  80
Gln Met Asn Ser Leu Arg Pro Glu Asp Thr Ala Val Tyr Tyr Cys Ala
                85                  90                  95
Arg Gly Ile Arg Gly Phe Asp Ile Trp Gly Gln Gly Thr Met Val Thr
            100                 105                 110
Val Ser Ser
        115
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<210> 267
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 267
ggattcaccg tcggtaccaa ctac 24

<210> 268
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 268
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Gly Phe Thr Val Gly Thr Asn Tyr
 1               5
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<210> 269
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 269
atttatagcg gtggtagcac a 21

<210> 270
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 270

Ile Tyr Ser Gly Gly Ser Thr
 1   5

<210> 271
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 271
gcgagaggta tacgtggttt tgatatc   27

<210> 272
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 272
Ala Arg Gly Ile Arg Gly Phe Asp Ile
 1   5

<210> 273
<211> 324
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 273
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgcc gggcaagtca gagcattagc agctatttaa attggtatca gcagaaacca 120
gggaaagccc ctaagctcct gatctatgct gcatccagtt tgcaaagtgg ggtcccgtca 180
aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 240
gaagattttg caacttacta ctgtcaacag agttacagta cccctccgat caccttcggc 300
caagggacac gactggagat taaa   324

<210> 274
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 274
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 Ser Ile Ser Ser Tyr
            20   25   30
Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35   40   45

```
Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
    50                  55                  60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Thr Pro Pro
                85                  90                  95
Ile Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
            100                 105
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<210> 275
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 275
cagagcatta gcagctat 18

<210> 276
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 276
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Gln Ser Ile Ser Ser Tyr
 1               5
```

<210> 277
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 277
gctgcatcc 9

<210> 278
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 278
```
Ala Ala Ser
 1
```

<210> 279

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

<220>
<223> Synthetic

<400> 279
caacagagtt acagtacccc tccgatcacc 30

<210> 280
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 280
Gln Gln Ser Tyr Ser Thr Pro Pro Ile Thr
 1   5   10

<210> 281
<211> 345
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 281
gaggtgcagc tggtggagtc tggaggaggc ttggtccagc cgggggggtc cctgagactc 60
tcctgtgcag cctctgggtt taccatcagt accaactaca tgaactgggt ccgccaggct 120
ccagggaagg ggctggagtg ggtcgcagtt atttatagca gtggttccac atactatatc 180
gactccgtga agggccgatt caccatctcc agactcactt ccaagaacac ggtgtatctt 240
caaatgagca gcctgaattc tgaagacacg gccgtgtatt actgtgcgag ggggatcagg 300
ggttttgata tttggggcca agggacaatg gtcaccgtct cttca 345

<210> 282
<211> 115
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 282
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Ile Ser Thr Asn
            20   25   30
Tyr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ala Val Ile Tyr Ser Ser Gly Ser Thr Tyr Tyr Ile Asp Ser Val Lys
    50   55   60
Gly Arg Phe Thr Ile Ser Arg Leu Thr Ser Lys Asn Thr Val Tyr Leu
65   70   75   80
Gln Met Ser Ser Leu Asn Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala

```
                85                  90                  95
Arg Gly Ile Arg Gly Phe Asp Ile Trp Gly Gln Gly Thr Met Val Thr
            100                 105                 110
Val Ser Ser
        115


<210> 283
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 283
gggtttacca tcagtaccaa ctac                                          24

<210> 284
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 284
Gly Phe Thr Ile Ser Thr Asn Tyr
 1               5


<210> 285
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 285
atttatagca gtggttccac a                                             21

<210> 286
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 286
Ile Tyr Ser Ser Gly Ser Thr
 1               5


<210> 287
<211> 27
<212> DNA
<213> Artificial Sequence
```

<220>
<223> Synthetic

<400> 287
gcgaggggga tcaggggttt tgatatt 27

<210> 288
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 288
Ala Arg Gly Ile Arg Gly Phe Asp Ile
1 5

<210> 289
<211> 372
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 289
gaagtgcagc tggtggagtc ggggggaggc ttggtacagc ctggcaggtc cctgagactc 60
tcctgtgcag cctctggatt caccattgat gatagtgcca tgcactgggt ccggcaaact 120
ccagggaagg gcctggagtg ggtctcaggt attagttgga aaagtggtag cataggttat 180
gcggactctg tgaggggccg attcaccatc tccagagaca acgccaagaa ttccctctat 240
ctgcaaatga acagtctgag agttgaggac acggccttgt attactgtgt aaaagatata 300
aggggcaact ggaactacgg gggaaactgg ttcgacccct ggggccaggg aaccctggtc 360
actgtctcct ca 372

<210> 290
<211> 124
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 290
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Ile Asp Asp Ser
20 25 30
Ala Met His Trp Val Arg Gln Thr Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Ser Gly Ile Ser Trp Lys Ser Gly Ser Ile Gly Tyr Ala Asp Ser Val
50 55 60
Arg Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65 70 75 80
Leu Gln Met Asn Ser Leu Arg Val Glu Asp Thr Ala Leu Tyr Tyr Cys
85 90 95
Val Lys Asp Ile Arg Gly Asn Trp Asn Tyr Gly Gly Asn Trp Phe Asp

```
            100                 105                 110
Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
        115                 120


<210> 291
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 291
ggattcacca ttgatgatag tgcc                                          24

<210> 292
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 292
Gly Phe Thr Ile Asp Asp Ser Ala
 1               5


<210> 293
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 293
attagttgga aaagtggtag cata                                          24

<210> 294
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 294
Ile Ser Trp Lys Ser Gly Ser Ile
 1               5


<210> 295
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
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<223> Synthetic

<400> 295
gtaaaagata taaggggcaa ctggaactac gggggaaact ggttcgaccc c 51

<210> 296
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 296
Val Lys Asp Ile Arg Gly Asn Trp Asn Tyr Gly Gly Asn Trp Phe Asp
 1   5   10   15
Pro

<210> 297
<211> 345
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 297
gaggtgcagc tggtggagtc tggaggaggc ttggtccagc ctgggggtc cctgagactc 60
tcatgtgaag cctctgggtt caccgtcggt gtcaaccaca tgaactgggt ccgccaggct 120
ccagggaagg gtctggagtg ggtctcagtt attttcagta gtggtaggac attctacgga 180
gactacgtga aggggcgatt aaccatcttc agacaaacct cccagaacac ggtgtatctt 240
caaatgaata gcctgagaag tgaggacacg gccatatatt actgtgcgag agggattggc 300
ggtttggaca tctggggccg agggacaatg gtcaccgtct cttca 345

<210> 298
<211> 115
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 298
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1   5   10   15
Ser Leu Arg Leu Ser Cys Glu Ala Ser Gly Phe Thr Val Gly Val Asn
            20   25   30
His Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Val Ile Phe Ser Ser Gly Arg Thr Phe Tyr Gly Asp Tyr Val Lys
    50   55   60
Gly Arg Leu Thr Ile Phe Arg Gln Thr Ser Gln Asn Thr Val Tyr Leu
65   70   75   80
Gln Met Asn Ser Leu Arg Ser Glu Asp Thr Ala Ile Tyr Tyr Cys Ala
                85   90   95
Arg Gly Ile Gly Gly Leu Asp Ile Trp Gly Arg Gly Thr Met Val Thr
            100   105   110

Val Ser Ser
        115

<210> 299
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 299
gggttcaccg tcggtgtcaa ccac 24

<210> 300
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 300
Gly Phe Thr Val Gly Val Asn His
 1   5

<210> 301
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 301
attttcagta gtggtaggac a 21

<210> 302
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 302
Ile Phe Ser Ser Gly Arg Thr
 1   5

<210> 303
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 303
gcgagaggga ttggcggttt ggacatc 27

<210> 304
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 304
Ala Arg Gly Ile Gly Gly Leu Asp Ile
 1   5

<210> 305
<211> 369
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 305
gaagtgcagc tggtggagtc tgggggaggc ttggttcagc ctggcaggtc cctaagactc 60
tcctgtgcag cctctggatt cacctttgat gattatgcct tgcactgggt ccggcaagct 120
ccagggaagg gcctggagtg ggtctcaggt attagttgga ctggtggtac tatagactat 180
gcggactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ctccctgtat 240
ctgcaaatga gcagtctgag aactgaggac acggccatat attactgtac aagagatatc 300
cgggggaact ggaagtacgg aggctggttc gacccctggg gccagggaac cctggtcacc 360
gtctcctca 369

<210> 306
<211> 123
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 306
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20   25   30
Ala Leu His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Gly Ile Ser Trp Thr Gly Gly Thr Ile Asp Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65   70   75   80
Leu Gln Met Ser Ser Leu Arg Thr Glu Asp Thr Ala Ile Tyr Tyr Cys
                85   90   95
Thr Arg Asp Ile Arg Gly Asn Trp Lys Tyr Gly Gly Trp Phe Asp Pro
            100   105   110
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
        115   120

<210> 307
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 307
ggattcacct ttgatgatta tgcc 24

<210> 308
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 308
Gly Phe Thr Phe Asp Asp Tyr Ala
 1 5

<210> 309
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 309
attagttgga ctggtggtac tata 24

<210> 310
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 310
Ile Ser Trp Thr Gly Gly Thr Ile
 1 5

<210> 311
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 311

acaagagata tccgggggaa ctggaagtac ggaggctggt tcgacccc 48

<210> 312
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 312
Thr Arg Asp Ile Arg Gly Asn Trp Lys Tyr Gly Gly Trp Phe Asp Pro
 1   5   10   15

<210> 313
<211> 360
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 313
caggtgcagc tggtgcagtc tgggactgag gtgaagaagc ctggggcctc agtgaaggtc 60
tcctgcaagg cttctggata caccttcacc gcctactata tgcactgggt gcgacaggcc 120
cctggtcaag gacttgactg gatgggatgg atcagcccta acagtggttt cacaaactat 180
gcacagaagt ttcagggcag ggtcaccatg accagggaca cgtccatcaa cacattttat 240
atggagctga gtggactgag atctgacgac acggccgtat attactgtgc gcgagagggt 300
tctactcacc acaattcttt cgacccctgg ggccagggaa ccctggtcac cgtctcctca 360

<210> 314
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 314
Gln Val Gln Leu Val Gln Ser Gly Thr 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 Ala Tyr
            20   25   30
Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Asp Trp Met
        35   40   45
Gly Trp Ile Ser Pro Asn Ser Gly Phe Thr Asn Tyr Ala Gln Lys Phe
    50   55   60
Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ile Asn Thr Phe Tyr
65   70   75   80
Met Glu Leu Ser Gly Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Glu Gly Ser Thr His His Asn Ser Phe Asp Pro Trp Gly Gln
            100   105   110
Gly Thr Leu Val Thr Val Ser Ser
        115   120

<210> 315
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 315
ggatacacct tcaccgccta ctat 24

<210> 316
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 316
Gly Tyr Thr Phe Thr Ala Tyr Tyr
1 5

<210> 317
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 317
atcagcccta acagtggttt caca 24

<210> 318
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 318
Ile Ser Pro Asn Ser Gly Phe Thr
1 5

<210> 319
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 319
gcgcgagagg gttctactca ccacaattct ttcgacccc 39

<210> 320
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 320
Ala Arg Glu Gly Ser Thr His His Asn Ser Phe Asp Pro
 1   5   10

<210> 321
<211> 342
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 321
gaggtgcagc tggtggagtc tggaggaggc ttggtccaac cgggggggtc cctgaggctc 60
tcctgtgcag cctctgggtt caccgtcggt actaacttca tgaattgggt ccgccaggct 120
ccagggaagg ggctggagtg ggtctcagcg atttatagcg gtggtaccgc taactacgca 180
gactccgtga agggccgatt caccatttcc agagacactt ccaggaacac gctgtatctt 240
caaatgaaca gcctgagaac tgaggacacg gccgtttatt attgtgcgag aggggggggt 300
atggacgtct ggggccaagg gaccacggtc accgtctcct ca   342

<210> 322
<211> 114
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 322
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Val Gly Thr Asn
            20   25   30
Phe Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Ala Ile Tyr Ser Gly Gly Thr Ala Asn Tyr Ala Asp Ser Val Lys
    50   55   60
Gly Arg Phe Thr Ile Ser Arg Asp Thr Ser Arg Asn Thr Leu Tyr Leu
65   70   75   80
Gln Met Asn Ser Leu Arg Thr Glu Asp Thr Ala Val Tyr Tyr Cys Ala
                85   90   95
Arg Gly Gly Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val
            100   105   110
Ser Ser

<210> 323
<211> 24
<212> DNA

<213> Artificial Sequence

<220>
<223> Synthetic

<400> 323
gggttcaccg tcggtactaa cttc 24

<210> 324
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 324
Gly Phe Thr Val Gly Thr Asn Phe
1 5

<210> 325
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 325
atttatagcg gtggtaccgc t 21

<210> 326
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 326
Ile Tyr Ser Gly Gly Thr Ala
1 5

<210> 327
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 327
gcgagagggg ggggtatgga cgtc 24

<210> 328
<211> 8
<212> PRT

<213> Artificial Sequence

<220>
<223> Synthetic

<400> 328
Ala Arg Gly Gly Gly Met Asp Val
 1   5

<210> 329
<211> 354
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 329
caggtccagc tggtgcagtc tggggctgag gtgaagaagc ctgggtcctc ggtgaaggtc 60
tcctgcaagg cttctggagg caccttcaac acctatgttc tcagctgggt gcgacaggcc 120
cctggacaag ggcttgagtg gatgggagag atcatcccta tcttaggtgc agcaaactac 180
gcacagaact tccagggcag agtcactttt accacggacg aatccacgaa tacagcctac 240
atggacctga gcagcctaag atctgaggac acggccgtgt attactgtgc gagagatcgg 300
acctccgggg ggttcgaccc ctggggccag ggaaccctgg tcactgtctc ctca   354

<210> 330
<211> 118
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 330
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
 1   5   10   15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly Thr Phe Asn Thr Tyr
            20   25   30
Val Leu Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35   40   45
Gly Glu Ile Ile Pro Ile Leu Gly Ala Ala Asn Tyr Ala Gln Asn Phe
    50   55   60
Gln Gly Arg Val Thr Phe Thr Thr Asp Glu Ser Thr Asn Thr Ala Tyr
65   70   75   80
Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Asp Arg Thr Ser Gly Gly Phe Asp Pro Trp Gly Gln Gly Thr
            100   105   110
Leu Val Thr Val Ser Ser
        115

<210> 331
<211> 24
<212> DNA
<213> Artificial Sequence

<220>

<223> Synthetic

<400> 331
ggaggcacct tcaacaccta tgtt 24

<210> 332
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 332
Gly Gly Thr Phe Asn Thr Tyr Val
1 5

<210> 333
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 333
atcatcccta tcttaggtgc agca 24

<210> 334
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 334
Ile Ile Pro Ile Leu Gly Ala Ala
1 5

<210> 335
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 335
gcgagagatc ggacctccgg ggggttcgac ccc 33

<210> 336
<211> 11
<212> PRT
<213> Artificial Sequence

<220>

<223> Synthetic

<400> 336
Ala Arg Asp Arg Thr Ser Gly Gly Phe Asp Pro
 1   5   10

<210> 337
<211> 357
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 337
caggttcagc tggtgcagtc tggagctgag gtggagaagc ctggggcctc agtgaaggtc 60
tcctgcaagg cttctggtta catctttacc cactatggta tcagctgggt gcgacaggcc 120
cctggacaag gacttgagtg ggtgggctgg atcagccctt acaatggtta cacagactat 180
gcacagaaac tccagggcag agtcaccttg accacagaca catccacgac cacagcctac 240
atggagctga ggaacctgag atctgacgac acggccatgt attactgttc gagagggagg 300
ggcccttact ggtccttcga tctctggggc cgtggcaccc tggtcaccgt ctcctca   357

<210> 338
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 338
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Glu Lys Pro Gly Ala
 1   5   10   15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Ile Phe Thr His Tyr
            20   25   30
Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Val
        35   40   45
Gly Trp Ile Ser Pro Tyr Asn Gly Tyr Thr Asp Tyr Ala Gln Lys Leu
    50   55   60
Gln Gly Arg Val Thr Leu Thr Thr Asp Thr Ser Thr Thr Thr Ala Tyr
65   70   75   80
Met Glu Leu Arg Asn Leu Arg Ser Asp Asp Thr Ala Met Tyr Tyr Cys
                85   90   95
Ser Arg Gly Arg Gly Pro Tyr Trp Ser Phe Asp Leu Trp Gly Arg Gly
            100   105   110
Thr Leu Val Thr Val Ser Ser
        115

<210> 339
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 339

ggttacatct ttacccacta tggt 24

<210> 340
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 340
Gly Tyr Ile Phe Thr His Tyr Gly
1 5

<210> 341
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 341
atcagccctt acaatggtta caca 24

<210> 342
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 342
Ile Ser Pro Tyr Asn Gly Tyr Thr
1 5

<210> 343
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 343
tcgagaggga ggggcccttа ctggtccttc gatctc 36

<210> 344
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 344

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Ser Arg Gly Arg Gly Pro Tyr Trp Ser Phe Asp Leu
 1               5                  10
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<210> 345
<211> 249
<212> PRT
<213> Artificial Sequence

<220>
<223> hPD-L1-MMH

<220>
<223> 1-221: aa 19-239 of NP_054862.1

<220>
<223> 222-249: myc-myc-hexahistidine tag

<400> 345

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Phe Thr Val Thr Val Pro Lys Asp Leu Tyr Val Val Glu Tyr Gly Ser
 1               5                  10                  15
Asn Met Thr Ile Glu Cys Lys Phe Pro Val Glu Lys Gln Leu Asp Leu
            20                  25                  30
Ala Ala Leu Ile Val Tyr Trp Glu Met Glu Asp Lys Asn Ile Ile Gln
        35                  40                  45
Phe Val His Gly Glu Glu Asp Leu Lys Val Gln His Ser Ser Tyr Arg
    50                  55                  60
Gln Arg Ala Arg Leu Leu Lys Asp Gln Leu Ser Leu Gly Asn Ala Ala
65                  70                  75                  80
Leu Gln Ile Thr Asp Val Lys Leu Gln Asp Ala Gly Val Tyr Arg Cys
                85                  90                  95
Met Ile Ser Tyr Gly Gly Ala Asp Tyr Lys Arg Ile Thr Val Lys Val
            100                 105                 110
Asn Ala Pro Tyr Asn Lys Ile Asn Gln Arg Ile Leu Val Val Asp Pro
        115                 120                 125
Val Thr Ser Glu His Glu Leu Thr Cys Gln Ala Glu Gly Tyr Pro Lys
    130                 135                 140
Ala Glu Val Ile Trp Thr Ser Ser Asp His Gln Val Leu Ser Gly Lys
145                 150                 155                 160
Thr Thr Thr Thr Asn Ser Lys Arg Glu Glu Lys Leu Phe Asn Val Thr
                165                 170                 175
Ser Thr Leu Arg Ile Asn Thr Thr Thr Asn Glu Ile Phe Tyr Cys Thr
            180                 185                 190
Phe Arg Arg Leu Asp Pro Glu Glu Asn His Thr Ala Glu Leu Val Ile
        195                 200                 205
Pro Glu Leu Pro Leu Ala His Pro Pro Asn Glu Arg Thr Glu Gln Lys
    210                 215                 220
Leu Ile Ser Glu Glu Asp Leu Gly Gly Glu Gln Lys Leu Ile Ser Glu
225                 230                 235                 240
Glu Asp Leu His His His His His His
                245
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<210> 346
<211> 249
<212> PRT
<213> Artificial Sequence

<220>

<223> MfPD-L1-MMH

<220>
<223> 1-221:MfPD-L1

<220>
<223> 222-249: myc-myc-hexahistidine tag

<400> 346
Phe Thr Val Thr Val Pro Lys Asp Leu Tyr Val Val Glu Tyr Gly Ser
 1   5   10   15
Asn Met Thr Ile Glu Cys Lys Phe Pro Val Glu Lys Gln Leu Asp Leu
            20   25   30
Thr Ser Leu Ile Val Tyr Trp Glu Met Glu Asp Lys Asn Ile Ile Gln
        35   40   45
Phe Val His Gly Glu Glu Asp Leu Lys Val Gln His Ser Asn Tyr Arg
    50   55   60
Gln Arg Ala Gln Leu Leu Lys Asp Gln Leu Ser Leu Gly Asn Ala Ala
65   70   75   80
Leu Arg Ile Thr Asp Val Lys Leu Gln Asp Ala Gly Val Tyr Arg Cys
                85   90   95
Met Ile Ser Tyr Gly Gly Ala Asp Tyr Lys Arg Ile Thr Val Lys Val
            100   105   110
Asn Ala Pro Tyr Asn Lys Ile Asn Gln Arg Ile Leu Val Val Asp Pro
        115   120   125
Val Thr Ser Glu His Glu Leu Thr Cys Gln Ala Glu Gly Tyr Pro Lys
    130   135   140
Ala Glu Val Ile Trp Thr Ser Ser Asp His Gln Val Leu Ser Gly Lys
145   150   155   160
Thr Thr Thr Thr Asn Ser Lys Arg Glu Glu Lys Leu Leu Asn Val Thr
                165   170   175
Ser Thr Leu Arg Ile Asn Thr Thr Ala Asn Glu Ile Phe Tyr Cys Ile
            180   185   190
Phe Arg Arg Leu Asp Pro Glu Glu Asn His Thr Ala Glu Leu Val Ile
        195   200   205
Pro Glu Leu Pro Leu Ala Leu Pro Pro Asn Glu Arg Thr Glu Gln Lys
    210   215   220
Leu Ile Ser Glu Glu Asp Leu Gly Gly Glu Gln Lys Leu Ile Ser Glu
225   230   235   240
Glu Asp Leu His His His His His His
                245

<210> 347
<211> 448
<212> PRT
<213> Artificial Sequence

<220>
<223> hPD-L1-hFc

<220>
<223> 1-221: aa 19-239 of NP_054862.1

<220>
<223> 222-448: aa 104-330 of P01857

<400> 347
Phe Thr Val Thr Val Pro Lys Asp Leu Tyr Val Val Glu Tyr Gly Ser

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 1               5                  10                  15
Asn Met Thr Ile Glu Cys Lys Phe Pro Val Glu Lys Gln Leu Asp Leu
            20                  25                  30
Ala Ala Leu Ile Val Tyr Trp Glu Met Glu Asp Lys Asn Ile Ile Gln
        35                  40                  45
Phe Val His Gly Glu Glu Asp Leu Lys Val Gln His Ser Ser Tyr Arg
    50                  55                  60
Gln Arg Ala Arg Leu Leu Lys Asp Gln Leu Ser Leu Gly Asn Ala Ala
65                  70                  75                  80
Leu Gln Ile Thr Asp Val Lys Leu Gln Asp Ala Gly Val Tyr Arg Cys
                85                  90                  95
Met Ile Ser Tyr Gly Gly Ala Asp Tyr Lys Arg Ile Thr Val Lys Val
            100                 105                 110
Asn Ala Pro Tyr Asn Lys Ile Asn Gln Arg Ile Leu Val Val Asp Pro
        115                 120                 125
Val Thr Ser Glu His Glu Leu Thr Cys Gln Ala Glu Gly Tyr Pro Lys
    130                 135                 140
Ala Glu Val Ile Trp Thr Ser Ser Asp His Gln Val Leu Ser Gly Lys
145                 150                 155                 160
Thr Thr Thr Thr Asn Ser Lys Arg Glu Glu Lys Leu Phe Asn Val Thr
                165                 170                 175
Ser Thr Leu Arg Ile Asn Thr Thr Thr Asn Glu Ile Phe Tyr Cys Thr
            180                 185                 190
Phe Arg Arg Leu Asp Pro Glu Glu Asn His Thr Ala Glu Leu Val Ile
        195                 200                 205
Pro Glu Leu Pro Leu Ala His Pro Pro Asn Glu Arg Thr Asp Lys Thr
    210                 215                 220
His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser
225                 230                 235                 240
Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg
                245                 250                 255
Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro
            260                 265                 270
Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala
        275                 280                 285
Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val
    290                 295                 300
Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr
305                 310                 315                 320
Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr
                325                 330                 335
Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu
            340                 345                 350
Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys
        355                 360                 365
Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser
    370                 375                 380
Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp
385                 390                 395                 400
Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser
                405                 410                 415
Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala
            420                 425                 430
Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
        435                 440                 445
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<210> 348
<211> 454

<212> PRT
<213> Artificial Sequence

<220>
<223> hPD-L1-mFc

<220>
<223> 1-221: aa 19-239 of NP_054862.1

<220>
<223> 222-454: aa 98-330 of P01863

<400> 348
Phe Thr Val Thr Val Pro Lys Asp Leu Tyr Val Val Glu Tyr Gly Ser
 1   5   10   15
Asn Met Thr Ile Glu Cys Lys Phe Pro Val Glu Lys Gln Leu Asp Leu
            20   25   30
Ala Ala Leu Ile Val Tyr Trp Glu Met Glu Asp Lys Asn Ile Ile Gln
        35   40   45
Phe Val His Gly Glu Glu Asp Leu Lys Val Gln His Ser Ser Tyr Arg
    50   55   60
Gln Arg Ala Arg Leu Leu Lys Asp Gln Leu Ser Leu Gly Asn Ala Ala
65   70   75   80
Leu Gln Ile Thr Asp Val Lys Leu Gln Asp Ala Gly Val Tyr Arg Cys
                85   90   95
Met Ile Ser Tyr Gly Gly Ala Asp Tyr Lys Arg Ile Thr Val Lys Val
            100   105   110
Asn Ala Pro Tyr Asn Lys Ile Asn Gln Arg Ile Leu Val Val Asp Pro
        115   120   125
Val Thr Ser Glu His Glu Leu Thr Cys Gln Ala Glu Gly Tyr Pro Lys
    130   135   140
Ala Glu Val Ile Trp Thr Ser Ser Asp His Gln Val Leu Ser Gly Lys
145   150   155   160
Thr Thr Thr Thr Asn Ser Lys Arg Glu Glu Lys Leu Phe Asn Val Thr
                165   170   175
Ser Thr Leu Arg Ile Asn Thr Thr Thr Asn Glu Ile Phe Tyr Cys Thr
            180   185   190
Phe Arg Arg Leu Asp Pro Glu Glu Asn His Thr Ala Glu Leu Val Ile
        195   200   205
Pro Glu Leu Pro Leu Ala His Pro Pro Asn Glu Arg Thr Glu Pro Arg
    210   215   220
Gly Pro Thr Ile Lys Pro Cys Pro Pro Cys Lys Cys Pro Ala Pro Asn
225   230   235   240
Leu Leu Gly Gly Pro Ser Val Phe Ile Phe Pro Pro Lys Ile Lys Asp
                245   250   255
Val Leu Met Ile Ser Leu Ser Pro Ile Val Thr Cys Val Val Val Asp
            260   265   270
Val Ser Glu Asp Asp Pro Asp Val Gln Ile Ser Trp Phe Val Asn Asn
        275   280   285
Val Glu Val His Thr Ala Gln Thr Gln Thr His Arg Glu Asp Tyr Asn
    290   295   300
Ser Thr Leu Arg Val Val Ser Ala Leu Pro Ile Gln His Gln Asp Trp
305   310   315   320
Met Ser Gly Lys Glu Phe Lys Cys Lys Val Asn Asn Lys Asp Leu Pro
                325   330   335
Ala Pro Ile Glu Arg Thr Ile Ser Lys Pro Lys Gly Ser Val Arg Ala
            340   345   350
Pro Gln Val Tyr Val Leu Pro Pro Pro Glu Glu Glu Met Thr Lys Lys
        355   360   365

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Gln Val Thr Leu Thr Cys Met Val Thr Asp Phe Met Pro Glu Asp Ile
    370                 375                 380
Tyr Val Glu Trp Thr Asn Asn Gly Lys Thr Glu Leu Asn Tyr Lys Asn
385                 390                 395                 400
Thr Glu Pro Val Leu Asp Ser Asp Gly Ser Tyr Phe Met Tyr Ser Lys
                405                 410                 415
Leu Arg Val Glu Lys Lys Asn Trp Val Glu Arg Asn Ser Tyr Ser Cys
            420                 425                 430
Ser Val Val His Glu Gly Leu His Asn His His Thr Thr Lys Ser Phe
        435                 440                 445
Ser Arg Thr Pro Gly Lys
    450


<210> 349
<211> 379
<212> PRT
<213> Artificial Sequence

<220>
<223> hPD-1-mFc

<220>
<223> 1-146: aa 25-170 of NP_005009.2 with C93S

<220>
<223> 147-379: aa 98-330 of P01863

<400> 349
Leu Asp Ser Pro Asp Arg Pro Trp Asn Pro Pro Thr Phe Ser Pro Ala
 1               5                  10                  15
Leu Leu Val Val Thr Glu Gly Asp Asn Ala Thr Phe Thr Cys Ser Phe
            20                  25                  30
Ser Asn Thr Ser Glu Ser Phe Val Leu Asn Trp Tyr Arg Met Ser Pro
        35                  40                  45
Ser Asn Gln Thr Asp Lys Leu Ala Ala Phe Pro Glu Asp Arg Ser Gln
    50                  55                  60
Pro Gly Gln Asp Ser Arg Phe Arg Val Thr Gln Leu Pro Asn Gly Arg
65                  70                  75                  80
Asp Phe His Met Ser Val Val Arg Ala Arg Arg Asn Asp Ser Gly Thr
                85                  90                  95
Tyr Leu Cys Gly Ala Ile Ser Leu Ala Pro Lys Ala Gln Ile Lys Glu
            100                 105                 110
Ser Leu Arg Ala Glu Leu Arg Val Thr Glu Arg Arg Ala Glu Val Pro
        115                 120                 125
Thr Ala His Pro Ser Pro Ser Pro Arg Pro Ala Gly Gln Phe Gln Thr
    130                 135                 140
Leu Val Glu Pro Arg Gly Pro Thr Ile Lys Pro Cys Pro Pro Cys Lys
145                 150                 155                 160
Cys Pro Ala Pro Asn Leu Leu Gly Gly Pro Ser Val Phe Ile Phe Pro
                165                 170                 175
Pro Lys Ile Lys Asp Val Leu Met Ile Ser Leu Ser Pro Ile Val Thr
            180                 185                 190
Cys Val Val Val Asp Val Ser Glu Asp Asp Pro Asp Val Gln Ile Ser
        195                 200                 205
Trp Phe Val Asn Asn Val Glu Val His Thr Ala Gln Thr Gln Thr His
    210                 215                 220
Arg Glu Asp Tyr Asn Ser Thr Leu Arg Val Val Ser Ala Leu Pro Ile
225                 230                 235                 240
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Gln His Gln Asp Trp Met Ser Gly Lys Glu Phe Lys Cys Lys Val Asn
                245                 250                 255
Asn Lys Asp Leu Pro Ala Pro Ile Glu Arg Thr Ile Ser Lys Pro Lys
            260                 265                 270
Gly Ser Val Arg Ala Pro Gln Val Tyr Val Leu Pro Pro Pro Glu Glu
        275                 280                 285
Glu Met Thr Lys Lys Gln Val Thr Leu Thr Cys Met Val Thr Asp Phe
    290                 295                 300
Met Pro Glu Asp Ile Tyr Val Glu Trp Thr Asn Asn Gly Lys Thr Glu
305                 310                 315                 320
Leu Asn Tyr Lys Asn Thr Glu Pro Val Leu Asp Ser Asp Gly Ser Tyr
                325                 330                 335
Phe Met Tyr Ser Lys Leu Arg Val Glu Lys Lys Asn Trp Val Glu Arg
            340                 345                 350
Asn Ser Tyr Ser Cys Ser Val Val His Glu Gly Leu His Asn His His
        355                 360                 365
Thr Thr Lys Ser Phe Ser Arg Thr Pro Gly Lys
    370                 375


<210> 350
<211> 373
<212> PRT
<213> Artificial Sequence

<220>
<223> hPD-1-hFc

<220>
<223> 1-146: aa 25-170 of NP_005009.2 with C93S

<220>
<223> 147-373: aa 104-330 of P01857

<400> 350
Leu Asp Ser Pro Asp Arg Pro Trp Asn Pro Pro Thr Phe Ser Pro Ala
 1               5                  10                  15
Leu Leu Val Val Thr Glu Gly Asp Asn Ala Thr Phe Thr Cys Ser Phe
            20                  25                  30
Ser Asn Thr Ser Glu Ser Phe Val Leu Asn Trp Tyr Arg Met Ser Pro
        35                  40                  45
Ser Asn Gln Thr Asp Lys Leu Ala Ala Phe Pro Glu Asp Arg Ser Gln
    50                  55                  60
Pro Gly Gln Asp Ser Arg Phe Arg Val Thr Gln Leu Pro Asn Gly Arg
65                  70                  75                  80
Asp Phe His Met Ser Val Val Arg Ala Arg Arg Asn Asp Ser Gly Thr
                85                  90                  95
Tyr Leu Cys Gly Ala Ile Ser Leu Ala Pro Lys Ala Gln Ile Lys Glu
            100                 105                 110
Ser Leu Arg Ala Glu Leu Arg Val Thr Glu Arg Arg Ala Glu Val Pro
        115                 120                 125
Thr Ala His Pro Ser Pro Ser Pro Arg Pro Ala Gly Gln Phe Gln Thr
    130                 135                 140
Leu Val Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu
145                 150                 155                 160
Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr
                165                 170                 175
Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val
            180                 185                 190
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```
Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val
        195                 200                 205
Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser
    210                 215                 220
Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu
225                 230                 235                 240
Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala
                245                 250                 255
Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro
            260                 265                 270
Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln
        275                 280                 285
Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala
    290                 295                 300
Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr
305                 310                 315                 320
Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu
                325                 330                 335
Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser
            340                 345                 350
Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser
        355                 360                 365
Leu Ser Pro Gly Lys
    370
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<210> 351
<211> 290
<212> PRT
<213> Artificial Sequence

<220>
<223> hPD-L1 NP_054862.1

<400> 351

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Met Arg Ile Phe Ala Val Phe Ile Phe Met Thr Tyr Trp His Leu Leu
 1               5                  10                  15
Asn Ala Phe Thr Val Thr Val Pro Lys Asp Leu Tyr Val Val Glu Tyr
            20                  25                  30
Gly Ser Asn Met Thr Ile Glu Cys Lys Phe Pro Val Glu Lys Gln Leu
        35                  40                  45
Asp Leu Ala Ala Leu Ile Val Tyr Trp Glu Met Glu Asp Lys Asn Ile
    50                  55                  60
Ile Gln Phe Val His Gly Glu Glu Asp Leu Lys Val Gln His Ser Ser
65                  70                  75                  80
Tyr Arg Gln Arg Ala Arg Leu Leu Lys Asp Gln Leu Ser Leu Gly Asn
                85                  90                  95
Ala Ala Leu Gln Ile Thr Asp Val Lys Leu Gln Asp Ala Gly Val Tyr
            100                 105                 110
Arg Cys Met Ile Ser Tyr Gly Gly Ala Asp Tyr Lys Arg Ile Thr Val
        115                 120                 125
Lys Val Asn Ala Pro Tyr Asn Lys Ile Asn Gln Arg Ile Leu Val Val
    130                 135                 140
Asp Pro Val Thr Ser Glu His Glu Leu Thr Cys Gln Ala Glu Gly Tyr
145                 150                 155                 160
Pro Lys Ala Glu Val Ile Trp Thr Ser Ser Asp His Gln Val Leu Ser
                165                 170                 175
Gly Lys Thr Thr Thr Thr Asn Ser Lys Arg Glu Glu Lys Leu Phe Asn
            180                 185                 190
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```
Val Thr Ser Thr Leu Arg Ile Asn Thr Thr Thr Asn Glu Ile Phe Tyr
        195                 200                 205
Cys Thr Phe Arg Arg Leu Asp Pro Glu Glu Asn His Thr Ala Glu Leu
    210                 215                 220
Val Ile Pro Glu Leu Pro Leu Ala His Pro Pro Asn Glu Arg Thr His
225                 230                 235                 240
Leu Val Ile Leu Gly Ala Ile Leu Leu Cys Leu Gly Val Ala Leu Thr
                245                 250                 255
Phe Ile Phe Arg Leu Arg Lys Gly Arg Met Met Asp Val Lys Lys Cys
            260                 265                 270
Gly Ile Gln Asp Thr Asn Ser Lys Lys Gln Ser Asp Thr His Leu Glu
        275                 280                 285
Glu Thr
    290


<210> 352
<211> 288
<212> PRT
<213> Artificial Sequence

<220>
<223> hPD-1 NP_005009.2

<400> 352
Met Gln Ile Pro Gln Ala Pro Trp Pro Val Val Trp Ala Val Leu Gln
 1               5                  10                  15
Leu Gly Trp Arg Pro Gly Trp Phe Leu Asp Ser Pro Asp Arg Pro Trp
            20                  25                  30
Asn Pro Pro Thr Phe Ser Pro Ala Leu Leu Val Val Thr Glu Gly Asp
        35                  40                  45
Asn Ala Thr Phe Thr Cys Ser Phe Ser Asn Thr Ser Glu Ser Phe Val
    50                  55                  60
Leu Asn Trp Tyr Arg Met Ser Pro Ser Asn Gln Thr Asp Lys Leu Ala
65                  70                  75                  80
Ala Phe Pro Glu Asp Arg Ser Gln Pro Gly Gln Asp Cys Arg Phe Arg
                85                  90                  95
Val Thr Gln Leu Pro Asn Gly Arg Asp Phe His Met Ser Val Val Arg
            100                 105                 110
Ala Arg Arg Asn Asp Ser Gly Thr Tyr Leu Cys Gly Ala Ile Ser Leu
        115                 120                 125
Ala Pro Lys Ala Gln Ile Lys Glu Ser Leu Arg Ala Glu Leu Arg Val
    130                 135                 140
Thr Glu Arg Arg Ala Glu Val Pro Thr Ala His Pro Ser Pro Ser Pro
145                 150                 155                 160
Arg Pro Ala Gly Gln Phe Gln Thr Leu Val Val Gly Val Val Gly Gly
                165                 170                 175
Leu Leu Gly Ser Leu Val Leu Leu Val Trp Val Leu Ala Val Ile Cys
            180                 185                 190
Ser Arg Ala Ala Arg Gly Thr Ile Gly Ala Arg Arg Thr Gly Gln Pro
        195                 200                 205
Leu Lys Glu Asp Pro Ser Ala Val Pro Val Phe Ser Val Asp Tyr Gly
    210                 215                 220
Glu Leu Asp Phe Gln Trp Arg Glu Lys Thr Pro Glu Pro Pro Val Pro
225                 230                 235                 240
Cys Val Pro Glu Gln Thr Glu Tyr Ala Thr Ile Val Phe Pro Ser Gly
                245                 250                 255
Met Gly Thr Ser Ser Pro Ala Arg Arg Gly Ser Ala Asp Gly Pro Arg
            260                 265                 270
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Ser Ala Gln Pro Leu Arg Pro Glu Asp Gly His Cys Ser Trp Pro Leu
        275                 280                 285


<210> 353
<211> 454
<212> PRT
<213> Artificial Sequence

<220>
<223> MfPD-L1-mFc
      aa1-221: Mf PD-L1 (aa 19-239 of XP_005581836.1)
      aa222-454: mFc tag (aa 98-330 of P01863)

<400> 353
Phe Thr Val Thr Val Pro Lys Asp Leu Tyr Val Val Glu Tyr Gly Ser
 1               5                  10                  15
Asn Met Thr Ile Glu Cys Lys Phe Pro Val Glu Lys Gln Leu Asp Leu
            20                  25                  30
Thr Ser Leu Ile Val Tyr Trp Glu Met Glu Asp Lys Asn Ile Ile Gln
        35                  40                  45
Phe Val His Gly Glu Glu Asp Leu Lys Val Gln His Ser Asn Tyr Arg
    50                  55                  60
Gln Arg Ala Gln Leu Leu Lys Asp Gln Leu Ser Leu Gly Asn Ala Ala
65                  70                  75                  80
Leu Arg Ile Thr Asp Val Lys Leu Gln Asp Ala Gly Val Tyr Arg Cys
                85                  90                  95
Met Ile Ser Tyr Gly Gly Ala Asp Tyr Lys Arg Ile Thr Val Lys Val
            100                 105                 110
Asn Ala Pro Tyr Asn Lys Ile Asn Gln Arg Ile Leu Val Val Asp Pro
        115                 120                 125
Val Thr Ser Glu His Glu Leu Thr Cys Gln Ala Glu Gly Tyr Pro Lys
    130                 135                 140
Ala Glu Val Ile Trp Thr Ser Ser Asp His Gln Val Leu Ser Gly Lys
145                 150                 155                 160
Thr Thr Thr Thr Asn Ser Lys Arg Glu Glu Lys Leu Leu Asn Val Thr
                165                 170                 175
Ser Thr Leu Arg Ile Asn Thr Thr Ala Asn Glu Ile Phe Tyr Cys Ile
            180                 185                 190
Phe Arg Arg Leu Asp Pro Glu Glu Asn His Thr Ala Glu Leu Val Ile
        195                 200                 205
Pro Glu Leu Pro Leu Ala Leu Pro Pro Asn Glu Arg Thr Glu Pro Arg
    210                 215                 220
Gly Pro Thr Ile Lys Pro Cys Pro Pro Cys Lys Cys Pro Ala Pro Asn
225                 230                 235                 240
Leu Leu Gly Gly Pro Ser Val Phe Ile Phe Pro Pro Lys Ile Lys Asp
                245                 250                 255
Val Leu Met Ile Ser Leu Ser Pro Ile Val Thr Cys Val Val Val Asp
            260                 265                 270
Val Ser Glu Asp Asp Pro Asp Val Gln Ile Ser Trp Phe Val Asn Asn
        275                 280                 285
Val Glu Val His Thr Ala Gln Thr Gln Thr His Arg Glu Asp Tyr Asn
    290                 295                 300
Ser Thr Leu Arg Val Val Ser Ala Leu Pro Ile Gln His Gln Asp Trp
305                 310                 315                 320
Met Ser Gly Lys Glu Phe Lys Cys Lys Val Asn Asn Lys Asp Leu Pro
                325                 330                 335
Ala Pro Ile Glu Arg Thr Ile Ser Lys Pro Lys Gly Ser Val Arg Ala
            340                 345                 350
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```
Pro Gln Val Tyr Val Leu Pro Pro Pro Glu Glu Glu Met Thr Lys Lys
        355                 360                 365
Gln Val Thr Leu Thr Cys Met Val Thr Asp Phe Met Pro Glu Asp Ile
    370                 375                 380
Tyr Val Glu Trp Thr Asn Asn Gly Lys Thr Glu Leu Asn Tyr Lys Asn
385                 390                 395                 400
Thr Glu Pro Val Leu Asp Ser Asp Gly Ser Tyr Phe Met Tyr Ser Lys
                405                 410                 415
Leu Arg Val Glu Lys Lys Asn Trp Val Glu Arg Asn Ser Tyr Ser Cys
            420                 425                 430
Ser Val Val His Glu Gly Leu His Asn His His Thr Thr Lys Ser Phe
        435                 440                 445
Ser Arg Thr Pro Gly Lys
    450
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