SEQUENCE LISTING

<110> Regeneron Pharmaceuticals, Inc.

<120> Anti-IL-25 Antibodies and Uses Thereof

<130> A0034WO01

<150> 62/054,167
<151> 2014-09-23

<160> 278

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gacttcgctg cacccgtgaa aggcagattc accatctcaa gagatgattc aaaaaacacg 240
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Trp Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Gly His Ile Glu Arg Lys Thr Asp Gly Gly Thr Thr Asp Phe 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 Tyr Leu Gln Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Val Tyr
                85   90   95
Tyr Cys Thr Thr Val Gly Pro Tyr Ser Val Pro Phe Asp Tyr Trp Gly
            100   105   110
Gln Gly Thr Leu Val Thr Val Ser Ser
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gggaaagccc ctaagctcct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180
aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 240
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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
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gcacagaagc tccagggcag agtcaccatg accacagaca catccacgag cacagcctac 240
atggagctga ggagcctgag atctgacgac acggccgtgt attactgtgc gagagttccc 300
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            20   25   30
Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35   40   45
Gly Trp Ile Ser Ala Tyr Asn Gly Asn Thr Asn Tyr Ala Gln Lys Leu
    50   55   60
Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65   70   75   80
Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Val Pro Ile Thr Gly Thr Thr Trp Phe Asp Pro Trp Gly Gln
            100   105   110
Gly Thr Leu Val Thr Val Ser Ser
        115   120

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<400> 21
atcagcgctt acaatggtaa caca 24

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gggaaagccc ctaagctcct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180
aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 240
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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 Thr Tyr Ser Thr Pro Ile
                85   90   95
Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
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<400> 27
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Ala Ala Ser
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<400> 32
Gln Gln Thr Tyr Ser Thr Pro Ile Thr

1 5

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ccagggaagg gactggaatg gattggtttt atctattaca gtgggagcac caacttcaac 180
ccctccctca agagtcgagt caccatttca atagacacgt ccaagaacca gttctccctg 240
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20 25 30
Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile
35 40 45
Gly Phe Ile Tyr Tyr Ser Gly Ser Thr Asn Phe Asn Pro Ser Leu Lys
50 55 60
Ser Arg Val Thr Ile Ser Ile Asp Thr Ser Lys Asn Gln Phe Ser Leu
65 70 75 80
Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95
Arg His Asp Tyr Asn Asp Tyr Glu Leu Asn Tyr Phe Asp Leu Trp Gly
100 105 110
Arg Gly Thr Leu Ala Ser Val Ser Ser
115 120

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<210> 36

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Gly Gly Ser Ile Ser Ser His Tyr
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<400> 38
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gggaaagccc ctaagctcct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180
aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 240
gaagattttg caacttacta ctgtcaacag acttacagta cccccatcac cttcggccaa 300
gggacacgac tggagattaa a 321

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

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<400> 44
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 1   5

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<400> 46
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Gln Gln Thr Tyr Ser Thr Pro Ile Thr
 1   5

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ccagggaagg gactggagtg gattggatat atcttttaca gtgggaacac caactacaac 180
ccctccctca agagtcgagt caccatttca gtagacacgt ccaagaacca gttctccctg 240
aagctgagct ctgtgaccgc cgcagacacg gccgtgtatt actgtgcgag agtcaggttc 300
agtgactacg aactaaactg gttcgacccc tggggccagg ggaccctggt caccgtctcc 360
tca 363

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

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<400> 52
Gly Ala Ser Ile Ser Asn Tyr Tyr
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<210> 54
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<400> 54
Ile Phe Tyr Ser Gly Asn Thr
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tggtaccagc agaaacctgg acagcctcct aaactactca tttactgggc gtcttcccgg 180
gaatccgggg tccctgaccg attcagtggc agcgggtcag ggacagattt cactctcact 240
atcaacagcc tgcaggctga agatgtggca gtttattact gtcagcaata tttcattact 300
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Glu Arg Ala Thr Ile Asn Cys Arg Ser Ser Gln Ser Val Phe Leu Gly
            20   25   30
Ser Asn Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln
        35   40   45
Pro Pro Lys Leu Leu Ile Tyr Trp Ala Ser Ser Arg Glu Ser Gly Val
    50   55   60
Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
65   70   75   80
Ile Asn Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln
                85   90   95
Tyr Phe Ile Thr Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Glu Ile
            100   105   110
Lys

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<400> 59
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<210> 60
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<220>
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<400> 60
Gln Ser Val Phe Leu Gly Ser Asn Asn Lys Asn Tyr
 1   5   10

<210> 61
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<212> DNA
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<220>
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<400> 61
tgggcgtct 9

<210> 62
<211> 3
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<400> 62
Trp Ala Ser
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<210> 63
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<400> 63
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<210> 64
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<220>
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<400> 64
Gln Gln Tyr Phe Ile Thr Pro Leu Thr
1 5

<210> 65
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ccaggaaagg gactggagtg gattggattt atcgattaca gtgggagcac caactacaac 180
ccctccctca agagtcgagt caccatatca gtagacacgt ccaagaacca gttctccctg 240
aagttgaact ctgtgaccgc cgcagacacg gccgtctatt actgtgcgag acaagagatc 300
attaacttcg agctgaactg gttcgacccc tggggccagg gaaccctggt cactgtctcc 360
tca 363

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

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<400> 67
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<210> 68
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Gly Gly Ser Ile Ser Ser Tyr Phe
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<210> 70
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<400> 70
Ile Asp Tyr Ser Gly Ser Thr
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<210> 71
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<400> 71
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<210> 72
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<212> PRT
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<400> 72
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1 5 10 15

<210> 73
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tggtaccagc agaaaccagg acagcctcct aacctgctca tttactggtc atctacccgg 180
gactccgggg tccctgaccg attcagtggc agcggttctg gggcagattt cactctcacc 240
atcagcagcc tgcaggctga agatgtggca gtttattact gtcagcaata ttttagtact 300
ccgtggacgt tcggccaagg gaccaaggtg gaaatcaaa 339

<210> 74
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

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

<210> 75
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 75
cagagtgttt tatacagttc caacaataag aactac 36

<210> 76
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 76
Gln Ser Val Leu Tyr Ser Ser Asn Asn Lys Asn Tyr
 1   5   10

<210> 77
<211> 9
<212> DNA

<213> Artificial Sequence

<220>
<223> synthetic

<400> 77
tggtcatct 9

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

<220>
<223> synthetic

<400> 78
Trp Ser Ser
1

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

<220>
<223> synthetic

<400> 79
cagcaatatt ttagtactcc gtggacg 27

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

<220>
<223> synthetic

<400> 80
Gln Gln Tyr Phe Ser Thr Pro Trp Thr
1 5

<210> 81
<211> 363
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 81
caggttcagc tggtgcagtc cggagctgag gtgaagaagc ctggggcctc agtgaaggtc 60
tcctgtaagg cttctggtta cacctttagt agttatggta ttagctgggt gcgacaggcc 120
cctggacaag ggcttgagtg gatgggatgg atcagcgctt acaatgataa cacacagtat 180
gcacagaaat tccagggcag agtcaccatg accacagaca catccacgag cacagcctac 240
atggagctga ggagcctgag atctgacgac acggccgtgt attactgtgc gagagtccca 300

ttacaatggt tcggggagtc ctttgaccac tggggccagg gaaccctggt caccgtctcc 360
tca 363

<210> 82
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

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

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

<220>
<223> synthetic

<400> 83
ggttacacct ttagtagtta tggt 24

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

<220>
<223> synthetic

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

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

<220>
<223> synthetic

<400> 85
atcagcgctt acaatgataa caca 24

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

<220>
<223> synthetic

<400> 86
Ile Ser Ala Tyr Asn Asp Asn Thr
1 5

<210> 87
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 87
gcgagagtcc cattacaatg gttcggggag tcctttgacc ac 42

<210> 88
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 88
Ala Arg Val Pro Leu Gln Trp Phe Gly Glu Ser Phe Asp His
1 5 10

<210> 89
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 89
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtgggga cagagtcacc 60
atcacttgcc gggcaagtca ggacattaac aactatttaa attggtttca gcagaaacca 120
gggaaagccc ctaagctcct gatcttttct acatccagtt tgcaaagtgg ggtcccatca 180
aggttcagtg gcagtggctc tggaacagat ttcactctca ccatcagcag tctccaatct 240
gaagattttg caacttatta ctgtcaacag actttcatta ccccgctcac tttcggcggc 300
gggaccaagg tggagatcaa a 321

<210> 90
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

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

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

<220>
<223> synthetic

<400> 91
caggacatta acaactat   18

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

<220>
<223> synthetic

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

<210> 93
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 93
tctacatcc   9

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

<220>
<223> synthetic

<400> 94
Ser Thr Ser
 1

<210> 95
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 95
caacagactt tcattacccc gctcact 27

<210> 96
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 96
Gln Gln Thr Phe Ile Thr Pro Leu Thr
 1   5

<210> 97
<211> 363
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 97
caggtgcagc tgcaggagtc gggcccagga ctggtgaagc cttcggagac cctgtccctc 60
acttgtactg tctctggtgg ctccatcagt aattacttct ggagctggat ccggcagccc 120
ccagggaagg gactggagtg gattgggttt aactataaca gtgggagcac caactataac 180
ccctccctca agagtcgagt caccatttca gtagacacgt ccaagaacca gttctccctg 240
aagctgagct ctgtgaccgc tgcggacacg gccgtgtatt actgtgcgag agggtataac 300
tggaactacg aaatagcttg gttcgacccc tggggccagg gaaccctggt cactgtctcc 360
tca 363

<210> 98
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

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

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

<220>
<223> synthetic

<400> 99
ggtggctcca tcagtaatta cttc   24

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

<220>
<223> synthetic

<400> 100
Gly Gly Ser Ile Ser Asn Tyr Phe
 1   5

<210> 101
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 101
aactataaca gtgggagcac c   21

<210> 102

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

<220>
<223> synthetic

<400> 102
Asn Tyr Asn Ser Gly Ser Thr
 1   5

<210> 103
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 103
gcgagagggt ataactggaa ctacgaaata gcttggttcg acccc   45

<210> 104
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 104
Ala Arg Gly Tyr Asn Trp Asn Tyr Glu Ile Ala Trp Phe Asp Pro
 1   5   10   15

<210> 105
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 105
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgcc gggcaagtca gagcataagc agttatttaa attggtatca gcagaaacca 120
gggaaagccc ctaagctcct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180
aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 240
gaagattttg caacttacta ttgtcaacag agttacctta ccccgctcac tttcggcgga 300
gggaccaagg tggagatcaa a   321

<210> 106
<211> 107
<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 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 Leu Thr Pro Leu
                85   90   95
Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100   105

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

<220>
<223> synthetic

<400> 107
cagagcataa gcagttat   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
gctgcatcc   9

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

<220>

<223> synthetic

<400> 110
Ala Ala Ser
 1

<210> 111
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 111
caacagagtt accttacccc gctcact 27

<210> 112
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 112
Gln Gln Ser Tyr Leu Thr Pro Leu Thr
 1   5

<210> 113
<211> 375
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 113
caggttcagc tggtgcagtc tggagctgag gtgatgaagc ctggggcctc agtgaaggtc 60
tcctgcaagt cttctgactt cgcctttacc acctatggca tcagctgggt gcgacaggcc 120
cctggacaag ggcttgagtg gatgggatgg atcagcgctt acaatggtaa cacaaactat 180
gaacagaggt tccagggcag aatcaccatg accacagaca catccacgac cacagtttat 240
atggagttga ggagcctgag atctgacgac acggccgtgt attactgtgc gagagatccc 300
gactattgta gtagtaacac ctgttctgat gcttttgatt tgtggggcca agggacaatg 360
gtcaccgtct cttca 375

<210> 114
<211> 125
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 114
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Met Lys Pro Gly Ala
 1   5   10   15

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Ser Val Lys Val Ser Cys Lys Ser Ser Asp Phe Ala Phe Thr Thr Tyr
            20                  25                  30
Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35                  40                  45
Gly Trp Ile Ser Ala Tyr Asn Gly Asn Thr Asn Tyr Glu Gln Arg Phe
    50                  55                  60
Gln Gly Arg Ile Thr Met Thr Thr Asp Thr Ser Thr Thr Thr Val Tyr
65                  70                  75                  80
Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Asp Pro Asp Tyr Cys Ser Ser Asn Thr Cys Ser Asp Ala Phe
            100                 105                 110
Asp Leu Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
        115                 120                 125
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<210> 115
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 115
gacttcgcct ttaccaccta tggc 24

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

<220>
<223> synthetic

<400> 116
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Asp Phe Ala Phe Thr Thr Tyr Gly
 1               5
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<210> 117
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 117
atcagcgctt acaatggtaa caca 24

<210> 118
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

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

<210> 119
<211> 54
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 119
gcgagagatc ccgactattg tagtagtaac acctgttctg atgcttttga tttg   54

<210> 120
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 120
Ala Arg Asp Pro Asp Tyr Cys Ser Ser Asn Thr Cys Ser Asp Ala Phe
 1   5   10   15
Asp Leu

<210> 121
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 121
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtacgaga cagagtcacc 60
atcacttgcc gggcgagtca gggcattacc aattatttag cctggtatca gcagaaacca 120
gggaaagttc ctaaggtcct gatctatgct gcatccactt tgcaatcagg ggtcccatct 180
cggttcagtg gcagtggctc tgggacagaa ttcactctcg ccatcagcag cctgcagcct 240
gaggatgttg caacttattt ctgtcaacag tatggcagtg ccccttggac gttcggccaa 300
gggaccaagg tggaaatcaa a   321

<210> 122
<211> 107
<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 Arg
 1   5   10   15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Thr Asn Tyr

```
            20                  25                  30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Val Pro Lys Val 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 Glu Phe Thr Leu Ala Ile Ser Ser Leu Gln Pro
65                  70                  75                  80
Glu Asp Val Ala Thr Tyr Phe Cys Gln Gln Tyr Gly Ser Ala Pro Trp
                85                  90                  95
Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
            100                 105
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<210> 123
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 123
cagggcatta ccaattat 18

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

<220>
<223> synthetic

<400> 124
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Gln Gly Ile Thr Asn 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
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Ala Ala Ser
 1
```

<210> 127
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 127
caacagtatg gcagtgcccc ttggacg 27

<210> 128
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 128
Gln Gln Tyr Gly Ser Ala Pro Trp Thr
 1   5

<210> 129
<211> 360
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 129
caggttcagc tggtgcagtc tggagctgag gtgaagaaac ctggggcctc agtgaaggtc 60
tcctgcaagg cttctgagta cacctttagc aactatggca tcagctgggt gcgacaggcc 120
cctggacaag gtcttgagtg gttggggtgg atcggcgctt atagtggttt cacaaaatat 180
gcacagaagg tccaggacag aatcaccatg accacagacg catccacgac cacagcctac 240
atggagctga gaaacctgag atctgacgac acggccgtgt attattgtgc gagagtggga 300
actggaactg actcttactt tgacttctgg ggccagggaa ccctggtcac cgtctcctca 360

<210> 130
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 130
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1   5   10   15
Ser Val Lys Val Ser Cys Lys Ala Ser Glu Tyr Thr Phe Ser Asn Tyr
            20   25   30
Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Leu
        35   40   45
Gly Trp Ile Gly Ala Tyr Ser Gly Phe Thr Lys Tyr Ala Gln Lys Val

```
    50                  55                  60
Gln Asp Arg Ile Thr Met Thr Thr Asp Ala Ser Thr Thr Thr Ala Tyr
65                  70                  75                  80
Met Glu Leu Arg Asn Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Val Gly Thr Gly Thr Asp Ser Tyr Phe Asp Phe Trp Gly Gln
            100                 105                 110
Gly Thr Leu Val Thr Val Ser Ser
        115                 120
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<210> 131
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 131
gagtacacct ttagcaacta tggc 24

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

<220>
<223> synthetic

<400> 132
Glu Tyr Thr Phe Ser Asn Tyr Gly
 1   5

<210> 133
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 133
atcggcgctt atagtggttt caca 24

<210> 134
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 134
Ile Gly Ala Tyr Ser Gly Phe Thr
 1   5

<210> 135
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 135
gcgagagtgg gaactggaac tgactcttac tttgacttc 39

<210> 136
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 136
Ala Arg Val Gly Thr Gly Thr Asp Ser Tyr Phe Asp Phe
 1   5   10

<210> 137
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 137
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgcc gggcaagtca gaacattaac agtcatttaa attggtatca gcagaaacca 120
gggaaagccc ctaaactcct gatttatact gcatccagtt tgcaaagtgg ggtcccatta 180
agattcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 240
gaagattttg gaatttacat ctgtcaacag acttacataa cccctctcac tttcggcggt 300
gggaccaagg tggagatcaa a 321

<210> 138
<211> 107
<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 Asn Ile Asn Ser His
            20   25   30
Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35   40   45
Tyr Thr Ala Ser Ser Leu Gln Ser Gly Val Pro Leu 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 Gly Ile Tyr Ile Cys Gln Gln Thr Tyr Ile Thr Pro Leu
85 90 95
Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
100 105

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

<220>
<223> synthetic

<400> 139
cagaacatta acagtcat 18

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

<220>
<223> synthetic

<400> 140
Gln Asn Ile Asn Ser His
1 5

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

<220>
<223> synthetic

<400> 141
actgcatcc 9

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

<220>
<223> synthetic

<400> 142
Thr Ala Ser
1

<210> 143
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 143
caacagactt acataacccc tctcact 27

<210> 144
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 144
Gln Gln Thr Tyr Ile Thr Pro Leu Thr
 1   5

<210> 145
<211> 369
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 145
caggtgcagc tgcaggagtc gggcccagga cttgtgaagt cttcggagac cctgtccctc 60
acctgcactg tctctggtgg ctccatcagt agttactact ggagctggat ccggcagccc 120
ccagggaagg gcctggaatg gattggattt atctattaca gtgggagcac caactacaac 180
ccctccctca agagtcgagt caccttttca gtagacactt ccaaaaacca cttctccctg 240
aagctgaact ctgtgaccgc cacagacacg gccgtgtatt actgtgcgcg acattacttt 300
gattcgggga cttatgaact ggggcctttt gactactggg gccagggaac cctggtcacc 360
gtctcctca 369

<210> 146
<211> 123
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 146
Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Ser Ser Glu
 1   5   10   15
Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Tyr
            20   25   30
Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile
        35   40   45
Gly Phe Ile Tyr Tyr Ser Gly Ser Thr Asn Tyr Asn Pro Ser Leu Lys
    50   55   60
Ser Arg Val Thr Phe Ser Val Asp Thr Ser Lys Asn His Phe Ser Leu
65   70   75   80
Lys Leu Asn Ser Val Thr Ala Thr Asp Thr Ala Val Tyr Tyr Cys Ala
                85   90   95
Arg His Tyr Phe Asp Ser Gly Thr Tyr Glu Leu Gly Pro Phe Asp Tyr
            100   105   110

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

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

<220>
<223> synthetic

<400> 147
ggtggctcca tcagtagtta ctac 24

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

<220>
<223> synthetic

<400> 148
Gly Gly Ser Ile Ser Ser Tyr Tyr
1 5

<210> 149
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 149
atctattaca gtgggagcac c 21

<210> 150
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 150
Ile Tyr Tyr Ser Gly Ser Thr
1 5

<210> 151
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
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<400> 151
gcgcgacatt actttgattc ggggacttat gaactggggc cttttgacta c 51

<210> 152
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 152
Ala Arg His Tyr Phe Asp Ser Gly Thr Tyr Glu Leu Gly Pro Phe Asp
 1 5 10 15
Tyr

<210> 153
<211> 339
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 153
gacatcgtga tgacccagtc tccagactcc ctggctgtgt ctctgggcga gagggccacc 60
atcaactgca agtccagcca gaatatttta ttaacttcca gtaataagaa ctacttaact 120
tggtaccagc agaaaccagg acagcctcct aagctgctca tttactgggc atctattcgg 180
gaatccgggg tccctgaccg attcagtggc agcgggtctg ggacagattt cactctcacc 240
atcagcagcc tgcaggctga agatgtggca ctttatttct gtcagcaata ttatattact 300
ccattcactt tcggccctgg gaccaaagtg gatatcaaa 339

<210> 154
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 154
Asp Ile Val Met Thr Gln Ser Pro Asp Ser Leu Ala Val Ser Leu Gly
 1 5 10 15
Glu Arg Ala Thr Ile Asn Cys Lys Ser Ser Gln Asn Ile Leu Leu Thr
 20 25 30
Ser Ser Asn Lys Asn Tyr Leu Thr Trp Tyr Gln Gln Lys Pro Gly Gln
 35 40 45
Pro Pro Lys Leu Leu Ile Tyr Trp Ala Ser Ile Arg Glu Ser Gly Val
 50 55 60
Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
65 70 75 80
Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Leu Tyr Phe Cys Gln Gln
 85 90 95
Tyr Tyr Ile Thr Pro Phe Thr Phe Gly Pro Gly Thr Lys Val Asp Ile
 100 105 110
Lys

<210> 155
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 155
cagaatattt tattaacttc cagtaataag aactac 36

<210> 156
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 156
Gln Asn Ile Leu Leu Thr Ser Ser Asn Lys Asn Tyr
 1 5 10

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

<220>
<223> synthetic

<400> 157
tgggcatct 9

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

<220>
<223> synthetic

<400> 158
Trp Ala Ser
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<210> 159
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 159
cagcaatatt atattactcc attcact 27

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

<220>
<223> synthetic

<400> 160
Gln Gln Tyr Tyr Ile Thr Pro Phe Thr
1 5

<210> 161
<211> 372
<212> DNA
<213> Artificial Sequence

<220>
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<400> 161
caggtgcagc tgcaggagtc gggcccagga ctggtgaagc cttcggagac cctgtccctc 60
acctgcactg tctctggtgg ctccatcagt gattactact ggagctggat ccggcagccc 120
ccagggaagg gactggagtg gattggccat atctattaca gtgggagcac caaccacaac 180
ccctccctca agagtcgagt cgccatatca gtcgacacgt ccaagaacca gttctccctg 240
aggctgtact ctgtgaccgc tgcggacacg gccgtgtatt actgtgcgag agacgggtat 300
agtagctcgt ccggcttcta ctacttcggt atggacgtct ggggccaagg gaccacggtc 360
accgtctcct ca 372

<210> 162
<211> 124
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 162
Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu
1 5 10 15
Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Asp Tyr
20 25 30
Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile
35 40 45
Gly His Ile Tyr Tyr Ser Gly Ser Thr Asn His Asn Pro Ser Leu Lys
50 55 60
Ser Arg Val Ala Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu
65 70 75 80
Arg Leu Tyr Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95
Arg Asp Gly Tyr Ser Ser Ser Ser Gly Phe Tyr Tyr Phe Gly Met Asp
100 105 110
Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 163
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 163
ggtggctcca tcagtgatta ctac 24

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

<220>
<223> synthetic

<400> 164
Gly Gly Ser Ile Ser Asp Tyr Tyr
1 5

<210> 165
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 165
atctattaca gtgggagcac c 21

<210> 166
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 166
Ile Tyr Tyr Ser Gly Ser Thr
1 5

<210> 167
<211> 54
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 167
gcgagagacg ggtatagtag ctcgtccggc ttctactact tcggtatgga cgtc 54

<210> 168
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 168
Ala Arg Asp Gly Tyr Ser Ser Ser Ser Gly Phe Tyr Tyr Phe Gly Met
 1   5   10   15
Asp Val

<210> 169
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 169
gacatccagt tgacccagtc tccatccttc ctgtctgcat ctgtcggaga cagagtcacc 60
atcacttgct gggccagtca ggacattaac agttatttag cctggtatca gcaaaaacca 120
gggaaagccc ctaagctcct gatctttgct gcatccactt tgcaaggtgg ggtcccttct 180
aggttcagcg gcagtggatc tgggacagaa ttcactctca caatcagcag cctgcagcct 240
gaagattttg caacttatta ctgtcaacac cttagtagtt tccctcccac cttcggccaa 300
gggacacgac tggagattaa a   321

<210> 170
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 170
Asp Ile Gln Leu Thr Gln Ser Pro Ser Phe Leu Ser Ala Ser Val Gly
 1   5   10   15
Asp Arg Val Thr Ile Thr Cys Trp Ala Ser Gln Asp Ile Asn Ser Tyr
            20   25   30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35   40   45
Phe Ala Ala Ser Thr Leu Gln Gly 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 Gln His Leu Ser Ser Phe Pro Pro
                85   90   95
Thr Phe 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
caggacatta acagttat 18

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

<220>
<223> synthetic

<400> 172
Gln Asp Ile Asn 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> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 175
caacacctta gtagtttccc tcccacc 27

<210> 176
<211> 9

<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 176
Gln His Leu Ser Ser Phe Pro Pro Thr
 1   5

<210> 177
<211> 363
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 177
caggtgcagc tgcaggagtc gggcccagga ctggtgaggc cttcggagac cctatccctc 60
atctgcactg tctctggtgg ctccatcaat agttactact ggagctggat ccggcagccc 120
ccagggaagg gactggaatg gattggatat atctattaca gtgggagcac caactacaac 180
ccctccctca agagtcgagt caccatatca ggagacacgt ccaagaacca gttctccctg 240
aagctgagct ctgtgaccgc tgcggacacg gccgtgtatt actgcgcgag aggggtaatc 300
tggaactacg aactccgaga atttgactac tggggccagg gaaccctggt caccgtctcc 360
tca   363

<210> 178
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 178
Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Arg Pro Ser Glu
 1   5   10   15
Thr Leu Ser Leu Ile Cys Thr Val Ser Gly Gly Ser Ile Asn Ser Tyr
            20   25   30
Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile
        35   40   45
Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr Asn Tyr Asn Pro Ser Leu Lys
    50   55   60
Ser Arg Val Thr Ile Ser Gly Asp Thr Ser Lys Asn Gln Phe Ser Leu
65   70   75   80
Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
                85   90   95
Arg Gly Val Ile Trp Asn Tyr Glu Leu Arg Glu Phe Asp Tyr Trp Gly
            100   105   110
Gln Gly Thr Leu Val Thr Val Ser Ser
        115   120

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

<220>
<223> synthetic

<400> 179
ggtggctcca tcaatagtta ctac 24

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

<220>
<223> synthetic

<400> 180
Gly Gly Ser Ile Asn Ser Tyr Tyr
1 5

<210> 181
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 181
atctattaca gtgggagcac c 21

<210> 182
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 182
Ile Tyr Tyr Ser Gly Ser Thr
1 5

<210> 183
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 183
gcgagagggg taatctggaa ctacgaactc cgagaatttg actac 45

<210> 184
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 184
Ala Arg Gly Val Ile Trp Asn Tyr Glu Leu Arg Glu Phe Asp Tyr
 1   5   10   15

<210> 185
<211> 339
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 185
gacatcgtga tgacccagtc tccagactcc ctggctgtgt ctctgggcga gagggccacc 60
atcaactgca agtccagcca gagtgtttta gacagttcca acaataagaa ctacttagtt 120
tggtaccagc agaaaccagg acagcctcct gagctgctca tttactgggc atctacccgg 180
gaatccgggg tccctgaccg attcagtggc agcgggtctg ggacagattt cactctcacc 240
atcagcagcc tgcaggctga agatgtggca gtttattact gtcagcaata ttattttact 300
ccgctcacct tcggcggagg gaccaaggtg gagatcaaa   339

<210> 186
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

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

<210> 187
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 187
cagagtgttt tagacagttc caacaataag aactac 36

<210> 188
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 188
Gln Ser Val Leu Asp Ser Ser Asn Asn Lys Asn Tyr
 1 5 10

<210> 189
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 189
tgggcatct 9

<210> 190
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 190
Trp Ala Ser
 1

<210> 191
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 191
cagcaatatt attttactcc gctcacc 27

<210> 192
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 192
Gln Gln Tyr Tyr Phe Thr Pro Leu Thr
 1   5

<210> 193
<211> 369
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 193
cagctgcagc tgcaggagtc gggcccagga ctggtgaggc cttcggagac cctgtccctc 60
acctgcagtg tctcgagtgg ctccatcaga agtagtaatt actactgggg ctggatccgc 120
cagcccccag ggaagggact ggagtggatt gggaatatct attatagtgg gaacaccttc 180
tataacccgt ccctcaaggg tcgagtcacc atatccgtag acacgtccaa gaaccagttc 240
tccctgaagc tgagctctgt gaccgccaca gacacggctg tgtattactg tgcgagacaa 300
ggatatagtg actacgagtt gaactggttc gacccctggg gccagggaac cctggtcacc 360
gtctcctca   369

<210> 194
<211> 123
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 194
Gln Leu Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Arg Pro Ser Glu
 1   5   10   15
Thr Leu Ser Leu Thr Cys Ser Val Ser Ser Gly Ser Ile Arg Ser Ser
            20   25   30
Asn Tyr Tyr Trp Gly Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu
        35   40   45
Trp Ile Gly Asn Ile Tyr Tyr Ser Gly Asn Thr Phe Tyr Asn Pro Ser
    50   55   60
Leu Lys Gly Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe
65   70   75   80
Ser Leu Lys Leu Ser Ser Val Thr Ala Thr Asp Thr Ala Val Tyr Tyr
                85   90   95
Cys Ala Arg Gln Gly Tyr Ser Asp Tyr Glu Leu Asn Trp Phe Asp Pro
            100   105   110
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
        115   120

<210> 195
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 195

agtggctcca tcagaagtag taattactac 30

<210> 196
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 196
Ser Gly Ser Ile Arg Ser Ser Asn Tyr Tyr
1 5 10

<210> 197
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 197
atctattata gtgggaacac c 21

<210> 198
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 198
Ile Tyr Tyr Ser Gly Asn Thr
1 5

<210> 199
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 199
gcgagacaag gatatagtga ctacgagttg aactggttcg acccc 45

<210> 200
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 200

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Ala Arg Gln Gly Tyr Ser Asp Tyr Glu Leu Asn Trp Phe Asp Pro
 1               5                  10                  15


<210> 201
<211> 339
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 201
gacatcgtga tgacccagtc tccagactcc ctggtgctgt ctctgggcga gagggccacc 60
ttcaactgca agtccagcca gagtgtttta gacagttcca acaataagaa ctacttagct 120
tggtaccagc agaaaccagg acagcctcct aagttgctca tttactgggc atctacccgg 180
gaatccgggg tccctgaccg attcagtggc agcgggtctg ggacagattt ctctctcacc 240
atcagcagcc tgcaggctga agatgtggca ctttattact gtcaacaatt ttataatagt 300
ccgtggacgt tcggccaagg gaccaaggtg gaaatcaaa                         339

<210> 202
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

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



<210> 203
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 203
cagagtgttt tagacagttc caacaataag aactac                           36

<210> 204
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<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 204
Gln Ser Val Leu Asp Ser Ser Asn Asn Lys Asn Tyr
 1   5   10

<210> 205
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 205
tgggcatct   9

<210> 206
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 206
Trp Ala Ser
 1

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

<220>
<223> synthetic

<400> 207
caacaatttt ataatagtcc gtggacg   27

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

<220>
<223> synthetic

<400> 208
Gln Gln Phe Tyr Asn Ser Pro Trp Thr
 1   5

<210> 209
<211> 363
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 209
caggtgcagc tgcaggagtc gggcccaggg ctggtgaagc cctcggagac cctgtccctc 60
acctgcactg tctctggtgg ctccatcaat agttattctt ggacctggat ccggcagccc 120
ccagggaagg gactggaatg gattggaaat atctataata gtgagaatac caactacaac 180
ccctccctca agagtcgagt caccatatca gttgacacgt ccaagagtca ggtttccctg 240
aaactgaact ctgtgaccgc tgcggacacg gccgtatatt actgtgcgag aacatataac 300
tggaactacg aaataggggc catgggcgtc tggggccagg ggaccacggt caccgtctcc 360
tca 363

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

<220>
<223> synthetic

<400> 210
Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu
 1   5   10   15
Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Asn Ser Tyr
            20   25   30
Ser Trp Thr Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile
        35   40   45
Gly Asn Ile Tyr Asn Ser Glu Asn Thr Asn Tyr Asn Pro Ser Leu Lys
    50   55   60
Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Ser Gln Val Ser Leu
65   70   75   80
Lys Leu Asn Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
                85   90   95
Arg Thr Tyr Asn Trp Asn Tyr Glu Ile Gly Ala Met Gly Val Trp Gly
            100   105   110
Gln Gly Thr Thr Val Thr Val Ser Ser
        115   120

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

<220>
<223> synthetic

<400> 211
ggtggctcca tcaatagtta ttct 24

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

<213> Artificial Sequence

<220>
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<400> 212
Gly Gly Ser Ile Asn Ser Tyr Ser
 1   5

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

<220>
<223> synthetic

<400> 213
atctataata gtgagaatac c   21

<210> 214
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 214
Ile Tyr Asn Ser Glu Asn Thr
 1   5

<210> 215
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 215
gcgagaacat ataactggaa ctacgaaata ggggccatgg gcgtc   45

<210> 216
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
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<400> 216
Ala Arg Thr Tyr Asn Trp Asn Tyr Glu Ile Gly Ala Met Gly Val
 1   5   10   15

<210> 217

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

<220>
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<400> 217
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atcaactgca agtccagcca gaatgtttta atcacctcca acaataagaa ttatttagct 120
tggtaccagc agaaaccagg acagcctcct aagctgctca tttactgggc ttccacccgg 180
gaattcgggg tccctgcccg attcagtggc agcgggtctg ggacagattt cactctcacc 240
atcagcagcc tgcaggctga agatgtggca gtttattact gtcagcaata ttatagtact 300
ccattcactt tcggccctgg gaccaaagtg gatatcaaa 339

<210> 218
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

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

<210> 219
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 219
cagaatgttt taatcacctc caacaataag aattat 36

<210> 220
<211> 12
<212> PRT
<213> Artificial Sequence

<220>

<223> synthetic

<400> 220
Gln Asn Val Leu Ile Thr Ser Asn Asn Lys Asn Tyr
 1   5   10

<210> 221
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 221
tgggcttcc   9

<210> 222
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 222
Trp Ala Ser
 1

<210> 223
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 223
cagcaatatt atagtactcc attcact   27

<210> 224
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 224
Gln Gln Tyr Tyr Ser Thr Pro Phe Thr
 1   5

<210> 225
<211> 363
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 225
caggttcagc tggtgcagtc tggagctgag gtgaagaagc ctgggacctc agtgaaggtc 60
tcctgcaagg cttctggtta cacctttacc aactatggta tcagttgggt gcgacaggcc 120
cctggacaag gtcttgagtg gttgggatgg atcagcgctt ataatgataa cacagactat 180
gcacagaaac tccaggccag agtcaccatg accacagaca cattcacgag cacagcctac 240
atggacctga ggagcctgag atctgacgac acggccgtgt attactgtgc gagagttcct 300
ataactggaa ctacctcaag ttttgacttc tggggccagg gaaccctggt caccgtctcc 360
tca 363

<210> 226
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 226
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Thr
 1   5   10   15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
            20   25   30
Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Leu
        35   40   45
Gly Trp Ile Ser Ala Tyr Asn Asp Asn Thr Asp Tyr Ala Gln Lys Leu
    50   55   60
Gln Ala Arg Val Thr Met Thr Thr Asp Thr Phe Thr Ser Thr Ala Tyr
65   70   75   80
Met Asp Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Val Pro Ile Thr Gly Thr Thr Ser Ser Phe Asp Phe Trp Gly
            100   105   110
Gln Gly Thr Leu Val Thr Val Ser Ser
        115   120

<210> 227
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 227
ggttacacct ttaccaacta tggt 24

<210> 228
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 228
Gly Tyr Thr Phe Thr Asn Tyr Gly
 1   5

<210> 229
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 229
atcagcgctt ataatgataa caca   24

<210> 230
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 230
Ile Ser Ala Tyr Asn Asp Asn Thr
 1   5

<210> 231
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 231
gcgagagttc ctataactgg aactacctca agttttgact tc   42

<210> 232
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 232
Ala Arg Val Pro Ile Thr Gly Thr Thr Ser Ser Phe Asp Phe
 1   5   10

<210> 233
<211> 321
<212> DNA
<213> Artificial Sequence

<220>

<223> synthetic

<400> 233
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
atctcttgcc gggcaagtca gaccatttac agctatttaa attggtttca gcagaaacca 120
gggaaagccc ctaagctcct gatctatgat gcatccagtt tgcaaagtgg ggtcccatca 180
aggttcagtg gcagtggctc tgggacacat ttcactctca ccatcagcag tctgcaacct 240
gaggattttg caacttactt ctgccaacag acttacagta cccctctcac tttcggcgga 300
gggaccaagg tggagatcaa a 321

<210> 234
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 234
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 Tyr Ser Tyr
            20   25   30
Leu Asn Trp Phe Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35   40   45
Tyr Asp Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
    50   55   60
Ser Gly Ser Gly Thr His Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65   70   75   80
Glu Asp Phe Ala Thr Tyr Phe Cys Gln Gln Thr Tyr Ser Thr Pro Leu
                85   90   95
Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100   105

<210> 235
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 235
cagaccattt acagctat 18

<210> 236
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 236
Gln Thr Ile Tyr Ser Tyr
 1   5

<210> 237
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 237
gatgcatcc 9

<210> 238
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 238
Asp Ala Ser
 1

<210> 239
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 239
caacagactt acagtacccc tctcact 27

<210> 240
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 240
Gln Gln Thr Tyr Ser Thr Pro Leu Thr
 1   5

<210> 241
<211> 360
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 241
caggtgcagc tgcaggagtc gggcccagga ctggtgaaac cttcggagac cctgtccctc 60
acctgcactg tctctggtgg ctccatcagt agttactact ggagctggat ccggcagccc 120

ccagggaagg gactggagtg gattggcttt atctattaca gtgggagcac caactacaac 180
ccctccctca agagtcgagt caccatctca gtagacacgt ccaagaacca gttctccctg 240
aagctgagtt ctgtgaccgc cgcagacacg gccgtgtatt actgtgcgag acatgacagt 300
gactacgaac tctacggtat ggacgtctgg ggccaaggga ccacggtcac cgtctcctca 360

<210> 242
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 242
Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu
 1   5   10   15
Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Tyr
            20   25   30
Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile
        35   40   45
Gly Phe Ile Tyr Tyr Ser Gly Ser Thr Asn Tyr Asn Pro Ser Leu Lys
    50   55   60
Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu
65   70   75   80
Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
                85   90   95
Arg His Asp Ser Asp Tyr Glu Leu Tyr Gly Met Asp Val Trp Gly Gln
            100   105   110
Gly Thr Thr Val Thr Val Ser Ser
        115   120

<210> 243
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 243
ggtggctcca tcagtagtta ctac 24

<210> 244
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 244
Gly Gly Ser Ile Ser Ser Tyr Tyr
 1   5

<210> 245
<211> 21

<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 245
atctattaca gtgggagcac c 21

<210> 246
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 246
Ile Tyr Tyr Ser Gly Ser Thr
1 5

<210> 247
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 247
gcgagacatg acagtgacta cgaactctac ggtatggacg tc 42

<210> 248
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 248
Ala Arg His Asp Ser Asp Tyr Glu Leu Tyr Gly Met Asp Val
1 5 10

<210> 249
<211> 339
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 249
gacatcgtga tgacccagtc tccagactcc ctggctgtgt ctctgggcga gagggccacc 60
atcacctgca agtccagcca gagtatttta tacaactccg acaataagaa ctacttagct 120
tggtaccagc agaaatcagg acagcctcct aagctgctca tttcctgggc atctacccgg 180
gaatccgggg tccctgaccg tttcagtggc agcgggtctg ggacagattt cactctcacc 240

atcagcagcc tgcaggctga agatgtggca gtttattact gtcaacaata ttttttttact 300
ccattcactt tcggccctgg gaccaaagtg gatatcaaa 339

<210> 250
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

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

<210> 251
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 251
cagagtattt tatacaactc cgacaataag aactac 36

<210> 252
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 252
Gln Ser Ile Leu Tyr Asn Ser Asp Asn Lys Asn Tyr
 1   5   10

<210> 253
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 253
tgggcatct 9

<210> 254
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 254
Trp Ala Ser
1

<210> 255
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 255
caacaatatt tttttactcc attcact 27

<210> 256
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 256
Gln Gln Tyr Phe Phe Thr Pro Phe Thr
1 5

<210> 257
<211> 363
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 257
gaggtgcagc tggtggagtc tgggggaggc ttggtacagc ctgggggtc cctgagactc 60
tcctgtgcag cctctggatt caccttcagt aactacgaca tacactgggt ccgccaagtt 120
ccaggaaaag gtctggagtg gatctcaact attggttctg ctggtgatac attctatcca 180
ggctccgtga agggccggtt caccatctcc agagaaaatg ccaagaactc cctgtatctt 240
caaatgaaca gcctgagagc cggggactcg gctgtatatt actgtgcaag aggggataac 300
tggaactacg tttcatggtt cttcgatctc tggggccgtg gcaccctggt cactgtctcc 360
tca 363

<210> 258
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 258
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Asn Tyr
            20   25   30
Asp Ile His Trp Val Arg Gln Val Pro Gly Lys Gly Leu Glu Trp Ile
        35   40   45
Ser Thr Ile Gly Ser Ala Gly Asp Thr Phe Tyr Pro Gly Ser Val Lys
    50   55   60
Gly Arg Phe Thr Ile Ser Arg Glu Asn Ala Lys Asn Ser Leu Tyr Leu
65   70   75   80
Gln Met Asn Ser Leu Arg Ala Gly Asp Ser Ala Val Tyr Tyr Cys Ala
                85   90   95
Arg Gly Asp Asn Trp Asn Tyr Val Ser Trp Phe Phe Asp Leu Trp Gly
            100   105   110
Arg Gly Thr Leu Val Thr Val Ser Ser
        115   120

<210> 259
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 259
ggattcacct tcagtaacta cgac   24

<210> 260
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 260
Gly Phe Thr Phe Ser Asn Tyr Asp
 1   5

<210> 261
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 261
attggttctg ctggtgatac a 21

<210> 262
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 262
Ile Gly Ser Ala Gly Asp Thr
1 5

<210> 263
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 263
gcaagagggg ataactggaa ctacgtttca tggttcttcg atctc 45

<210> 264
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 264
Ala Arg Gly Asp Asn Trp Asn Tyr Val Ser Trp Phe Phe Asp Leu
1 5 10 15

<210> 265
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 265
gacatccagt tgacccagtc tccatccttc ctgtctacat ctgtcggaga cagagtcacc 60
atcacgtgct gggccagtca ggacatcagc agtttttag cctggtatca gcagaaacca 120
gggaaagccc ctaaactcct gatctatgct gcgtccgttt tgcaaagtgg ggtcccatca 180
aggttcagcg gcagtggatc tgggacagaa ttcactctca caatcagcag tctgcagcct 240
gaagattttg caacttatta ctgtcagcag gttaatagtt acccgatcac cttcggccaa 300
gggacacgac tggagattaa a 321

<210> 266
<211> 107

<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 266
Asp Ile Gln Leu Thr Gln Ser Pro Ser Phe Leu Ser Thr Ser Val Gly
 1   5   10   15
Asp Arg Val Thr Ile Thr Cys Trp Ala Ser Gln Asp Ile Ser Ser Phe
            20   25   30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35   40   45
Tyr Ala Ala Ser Val 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 Gln Gln Val Asn Ser Tyr Pro Ile
                85   90   95
Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
            100   105

<210> 267
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 267
caggacatca gcagtttt   18

<210> 268
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 268
Gln Asp Ile Ser Ser Phe
 1   5

<210> 269
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 269
gctgcgtcc   9

<210> 270

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

<220>
<223> synthetic

<400> 270
Ala Ala Ser
 1

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

<220>
<223> synthetic

<400> 271
cagcaggtta atagttaccc gatcacc 27

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

<220>
<223> synthetic

<400> 272
Gln Gln Val Asn Ser Tyr Pro Ile Thr
 1   5

<210> 273
<211> 173
<212> PRT
<213> Artificial Sequence

<220>
<223> hIL-25-MMH
      aa 1-145: hIL-25 (aa 33-177 of NP_073626.1)
      aa 146-173: myc-myc-hexahistidine tag

<400> 273
Tyr Ser His Trp Pro Ser Cys Cys Pro Ser Lys Gly Gln Asp Thr Ser
 1   5   10   15
Glu Glu Leu Leu Arg Trp Ser Thr Val Pro Val Pro Pro Leu Glu Pro
            20   25   30
Ala Arg Pro Asn Arg His Pro Glu Ser Cys Arg Ala Ser Glu Asp Gly
        35   40   45
Pro Leu Asn Ser Arg Ala Ile Ser Pro Trp Arg Tyr Glu Leu Asp Arg
    50   55   60
Asp Leu Asn Arg Leu Pro Gln Asp Leu Tyr His Ala Arg Cys Leu Cys
65   70   75   80
Pro His Cys Val Ser Leu Gln Thr Gly Ser His Met Asp Pro Arg Gly
                85   90   95

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Asn Ser Glu Leu Leu Tyr His Asn Gln Thr Val Phe Tyr Arg Arg Pro
            100                 105                 110
Cys His Gly Glu Lys Gly Thr His Lys Gly Tyr Cys Leu Glu Arg Arg
        115                 120                 125
Leu Tyr Arg Val Ser Leu Ala Cys Val Cys Val Arg Pro Arg Val Met
    130                 135                 140
Gly Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Gly Gly Glu Gln Lys
145                 150                 155                 160
Leu Ile Ser Glu Glu Asp Leu His His His His His His
                165                 170
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<210> 274
<211> 172
<212> PRT
<213> Artificial Sequence

<220>
<223> MfIL-25-MMH
aa 1-144: M.fascicularis IL-25 (aa 33-176 of XP_001107906.2)
aa 145-172: myc-myc-hexahistidine tag

<400> 274

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Tyr Ser His Trp Pro Ser Cys Cys Pro Ser Lys Gly Tyr Pro Ser Glu
 1               5                  10                  15
Glu Leu Leu Arg Trp Ser Thr Val Pro Val Pro Pro Leu Lys Pro Ala
            20                  25                  30
Ser Leu Asp Phe His Ser Val Ser Cys Arg Ala Ser Glu Asp Gly Pro
        35                  40                  45
Leu Asn Ser Arg Ala Ile Ser Pro Trp Arg Tyr Glu Leu Asp Arg Asp
    50                  55                  60
Leu Asn Arg Leu Pro Gln Asp Leu Tyr His Ala Arg Cys Leu Cys Pro
65                  70                  75                  80
His Cys Val Ser Leu Gln Thr Gly Ser His Met Asp Pro Arg Gly Asn
                85                  90                  95
Ser Glu Leu Leu Tyr His Asn Gln Thr Val Phe Tyr Arg Arg Pro Cys
            100                 105                 110
His Gly Lys Lys Gly Asn His Lys Gly Tyr Cys Leu Glu Arg Arg Leu
        115                 120                 125
Tyr Arg Val Ser Leu Ala Cys Val Cys Val Arg Pro Arg Val Met Gly
    130                 135                 140
Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Gly Gly Glu Gln Lys Leu
145                 150                 155                 160
Ile Ser Glu Glu Asp Leu His His His His His His
                165                 170
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<210> 275
<211> 181
<212> PRT
<213> Artificial Sequence

<220>
<223> mouse IL-25-MMH
aa 1-153: Mouse IL-25 (aa 17-169 of NP_542767.1)
aa 154-181: myc-myc-hexahistidine tag

<400> 275

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Val Ser Leu Arg Ile Gln Glu Gly Cys Ser His Leu Pro Ser Cys Cys
 1               5                  10                  15
Pro Ser Lys Glu Gln Glu Pro Pro Glu Glu Trp Leu Lys Trp Ser Ser
            20                  25                  30
Ala Ser Val Ser Pro Pro Glu Pro Leu Ser His Thr His His Ala Glu
        35                  40                  45
Ser Cys Arg Ala Ser Lys Asp Gly Pro Leu Asn Ser Arg Ala Ile Ser
    50                  55                  60
Pro Trp Ser Tyr Glu Leu Asp Arg Asp Leu Asn Arg Val Pro Gln Asp
65                  70                  75                  80
Leu Tyr His Ala Arg Cys Leu Cys Pro His Cys Val Ser Leu Gln Thr
                85                  90                  95
Gly Ser His Met Asp Pro Leu Gly Asn Ser Val Pro Leu Tyr His Asn
            100                 105                 110
Gln Thr Val Phe Tyr Arg Arg Pro Cys His Gly Glu Glu Gly Thr His
        115                 120                 125
Arg Arg Tyr Cys Leu Glu Arg Arg Leu Tyr Arg Val Ser Leu Ala Cys
    130                 135                 140
Val Cys Val Arg Pro Arg Val Met Ala Glu Gln Lys Leu Ile Ser Glu
145                 150                 155                 160
Glu Asp Leu Gly Gly Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu His
                165                 170                 175
His His His His His
            180
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<210> 276
<211> 181
<212> PRT
<213> Artificial Sequence

<220>
<223> rat IL-25-MMH
aa 1-153: Rat IL-25 (aa 17-169 of NP_001178936.1)
aa 154-181: myc-myc-hexahistidine tag

<400> 276

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Val Ser Leu Arg Ile Gln Glu Asp Cys Ser His Leu Pro Arg Cys Cys
 1               5                  10                  15
Pro Ser Lys Gln Gln Glu Phe Pro Glu Glu Trp Leu Lys Trp Asn Pro
            20                  25                  30
Ala Pro Val Ser Pro Pro Glu Pro Leu Arg His Thr His His Pro Glu
        35                  40                  45
Ser Cys Arg Ala Ser Lys Asp Gly Pro Leu Asn Ser Arg Ala Ile Ser
    50                  55                  60
Pro Trp Ser Tyr Glu Leu Asp Arg Asp Leu Asn Arg Val Pro Gln Asp
65                  70                  75                  80
Leu Tyr His Ala Arg Cys Leu Cys Pro His Cys Val Ser Leu Gln Thr
                85                  90                  95
Gly Ser His Met Asp Pro Met Gly Asn Ser Val Pro Leu Tyr His Asn
            100                 105                 110
Gln Thr Val Phe Tyr Arg Arg Pro Cys His Gly Glu Gln Gly Ala His
        115                 120                 125
Gly Arg Tyr Cys Leu Glu Arg Arg Leu Tyr Arg Val Ser Leu Ala Cys
    130                 135                 140
Val Cys Val Arg Pro Arg Met Met Ala Glu Gln Lys Leu Ile Ser Glu
145                 150                 155                 160
Glu Asp Leu Gly Gly Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu His
                165                 170                 175
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His His His His His
180

<210> 277
<211> 1335
<212> DNA
<213> Artificial Sequence

<220>
<223> Human IL-25 (NM_022789.3)

<400> 277
ggcttgctga aaataaaatc aggactccta acctgctcca gtcagcctgc ttccacgagg 60
cctgtcagtc agtgccccac ttgtgactga gtgtgcagtg cccagcatgt accaggtcag 120
tgcagagggc tgcctgaggg ctgtgctgag agggagagga gcagagatgc tgctgagggt 180
ggagggaggc caagctgcca ggtttggggc tgggggccaa gtggagtgag aaactgggat 240
cccaggggga gggtgcagat gagggagcga cccagattag gtgaggacag ttctctcatt 300
agccttttcc tacaggtggt tgcattcttg gcaatggtca tgggaaccca cacctacagc 360
cactggccca gctgctgccc cagcaaaggg caggacacct ctgaggagct gctgaggtgg 420
agcactgtgc ctgtgcctcc cctagagcct gctaggccca accgccaccc agagtcctgt 480
agggccagtg aagatggacc cctcaacagc agggccatct ccccctggag atatgagttg 540
gacagagact tgaaccggct cccccaggac ctgtaccacg cccgttgcct gtgcccgcac 600
tgcgtcagcc tacagacagg ctcccacatg gacccccggg gcaactcgga gctgctctac 660
cacaaccaga ctgtcttcta ccggcggcca tgccatggcg agaagggcac ccacaagggc 720
tactgcctgg agcgcaggct gtaccgtgtt tccttagctt gtgtgtgtgt gcggccccgt 780
gtgatgggct agccggacct gctggaggct ggtccctttt tgggaaacct ggagccaggt 840
gtacaaccac ttgccatgaa gggccaggat gcccagatgc ttggcccctg tgaagtgctg 900
tctggagcag caggatcccg ggacaggatg gggggctttg gggaaagcct gcacttctgc 960
acattttgaa aagagcagct gctgcttagg gccgccggaa gctggtgtcc tgtcattttc 1020
tctcaggaaa ggttttcaaa gttctgccca tttctggagg ccaccactcc tgtctcttcc 1080
tcttttccca tcccctgcta ccctggccca gcacaggcac tttctagata tttccccctt 1140
gctggagaag aaagagcccc tggttttatt tgtttgttta ctcatcactc agtgagcatc 1200
tactttgggt gcattctagt gtagttacta gtcttttgac atggatgatt ctgaggagga 1260
agctgttatt gaatgtatag agatttatcc aaataaatat ctttatttaa aaatgaaaaa 1320
aaaaaaaaaa aaaaa 1335

<210> 278
<211> 177
<212> PRT
<213> Artificial Sequence

<220>
<223> Human IL-25

<400> 278
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Tyr Ser His Trp Pro Ser Cys Cys Pro Ser Lys Gly Gln Asp Thr Ser
35 40 45
Glu Glu Leu Leu Arg Trp Ser Thr Val Pro Val Pro Pro Leu Glu Pro
50 55 60
Ala Arg Pro Asn Arg His Pro Glu Ser Cys Arg Ala Ser Glu Asp Gly
65 70 75 80
Pro Leu Asn Ser Arg Ala Ile Ser Pro Trp Arg Tyr Glu Leu Asp Arg
85 90 95
Asp Leu Asn Arg Leu Pro Gln Asp Leu Tyr His Ala Arg Cys Leu Cys

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Pro His Cys Val Ser Leu Gln Thr Gly Ser His Met Asp Pro Arg Gly
        115                 120                 125
Asn Ser Glu Leu Leu Tyr His Asn Gln Thr Val Phe Tyr Arg Arg Pro
    130                 135                 140
Cys His Gly Glu Lys Gly Thr His Lys Gly Tyr Cys Leu Glu Arg Arg
145                 150                 155                 160
Leu Tyr Arg Val Ser Leu Ala Cys Val Cys Val Arg Pro Arg Val Met
                165                 170                 175
Gly
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