

38_21_56191_APCT_SequenceListing_ST25.txt
SEQUENCE LISTING

<110> Monsanto Technology LLC
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Moshiri, Farhad
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von Rechenberg, Moritz
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Wollacott, Andrew M
Zheng, Meiyang

<120> PROTEINS TOXIC TO HEMIPTERAN INSECT SPECIES

<130> 38-21(56191)A/PCT

<150> US 61/621,436
<151> 2012-04-06

<160> 206

<170> PatentIn version 3.5

<210> 1
<211> 927
<212> DNA
<213> Bacillus thuringiensis

<220>
<221> misc_feature
<223> A sequence representing a recombinant polynucleotide derived from a native gene from a Bacillus thuringiensis (Bt) species encoding a TIC807 protein.

<400> 1
atggctatcc tagaccttaa gtccctcgtg ctgaacgcca ttaactactg gggccctaag 60
aacaacaacg gcatccaggg cggtgacttc ggctacccca tctctgagaa gcagatcgac 120
actagcatca ttaccttcac ccaccctcgc ttgatccctt acgatcttac tatcccgcag 180
aaccttgaga ccatcttcac cacaacgcag gtgctcacca ataactactga cctccagcaa 240
tcccagaccg tgagcttttg gaagaagacc actaccacga cctcaactag cagcaccaac 300
ggttggacag aaggaggcaa gatcagcgac acgctggagg agaaagtttc ggtttagcatt 360
ccgttcatcg gtgaggggtg cggaagaac tcgactacca tagaggccaa cttcgcacac 420
aactctagca ccactacctt ccagcaagca agcactgaca ttgagtggaa cattagccaa 480
ccggtgctgg ttctccctc taaacaagtt gtcgcgaccc ttgtgatcat gggaggcaac 540
tttaccatcc ctatggactt gatgaccacg attgatagta cagagcacta ctcccactac 600
tccggttacc ctatcctcac ctggatctcg tcccagata actcttactc cggtcccttt 660
atgtcatggg actttgcaaa ctggcctaac cttccgagtg gattcggccc actgaatagt 720
gataacacgg tcacatacac tggctctgtc gtgtcccaag tttcggccgg tgtctacgct 780
accgtccggt tcgatcagta tgacattcac aatctccgta ctatcgagaa gacttggtat 840
gctcgccatg cgacgctgca taatggcaag aagatttcta tcaacaatgt cacggaaatg 900
gctccaacat cccctatcaa gacaaat 927

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<210> 2
 <211> 309
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> engineered

<220>
 <221> MISC_FEATURE
 <223> TIC807

<220>
 <221> misc_feature
 <223> The amino acid sequence translation of of the open reading frame
 of SEQ ID NO: 1 from nucleotides 1 through 927.

<400> 2

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
 1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
 20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Phe Thr His
 35 40 45

Pro Arg Leu Ile Pro Tyr Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
 50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
 65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
 85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
 100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
 115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
 130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
 145 150 155 160

Pro Val Leu Val Pro Pro Ser Lys Gln Val Val Ala Thr Leu Val Ile
 165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
 180 185 190

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Ser Thr Glu His Tyr Ser His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp
195 200 205

Ile Ser Ser Pro Asp Asn Ser Tyr Ser Gly Pro Phe Met Ser Trp Tyr
210 215 220

Phe Ala Asn Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser
225 230 235 240

Asp Asn Thr Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala
245 250 255

Gly Val Tyr Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu
260 265 270

Arg Thr Ile Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn
275 280 285

Gly Lys Lys Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser
290 295 300

Pro Ile Lys Thr Asn
305

<210> 3
<211> 927
<212> DNA
<213> Artificial Sequence

<220>
<223> engineered

<220>
<221> misc_feature
<223> A nucleotide sequence encoding SEQ ID NO: 4 with an open reading
frame from 1 to 927.

<400> 3
atggctatcc tagaccttaa gtccctcgtg ctgaacgcca ttaactactg gggccctaag 60
aacaacaacg gcatccaggg cggtgacttc ggctacccca tctctgagaa gcagatcgac 120
actagcatca ttaccttcac ccaccctcgc ttgatccctt acgatcttac tatcccgag 180
aaccttgaga ccatcttcac cacaacgcag gtgctcacca ataactactga cctccagcaa 240
tcccagaccg tgagctttgc gaagaagacc actaccacga cctcaactag cacgaccaac 300
ggttggacag aaggaggcaa gatcagcgac acgctggagg agaaagtttc ggtagcatt 360
ccgttcatcg gtgcgggtgg cgggaagaac tcgactacca tagaggccaa cttcgcacac 420
aactctagca ccactacctt ccagcaagca agcactgaca ttgagtggaa cattagccaa 480
ccggtgctgg ttctccctc taaacaagtt gtcgcgaccc ttgtgatcat gggagggaac 540
tttaccatcc ctatggactt gatgaccacg attgatagta cagagcacta ctcccactac 600

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```
tccggttacc ctatcctcac ctggatctcg tccccagata actcttactc cggtcctttt    660
atgtcatggt actttgcaaa ctggcctaac cttccgagtg gattcggccc actgaatagt    720
gataacacgg tcacatacac tggctctgtc gtgtcccaag tttcggccgg tgtctacgct    780
accgtccggt tcgatcagta tgacattcac aatctccgta ctatcgagaa gacttggtat    840
gctcgccatg cgacgctgca taatggcaag aagatttcta tcaacaatgt cacggaaatg    900
gctccaacat cccctatcaa gacaaat                                         927
```

<210> 4
 <211> 309
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> engineered

<220>
 <221> misc_feature
 <223> The amino acid sequence translation of of the open reading frame
 set forth as SEQ ID NO: 3.

<400> 4

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
 1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
 20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Phe Thr His
 35 40 45

Pro Arg Leu Ile Pro Tyr Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
 50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
 65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
 85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
 100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Ala Gly Gly Gly
 115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
 130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
 145 150 155 160

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Pro Val Leu Val Pro Pro Ser Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp
195 200 205

Ile Ser Ser Pro Asp Asn Ser Tyr Ser Gly Pro Phe Met Ser Trp Tyr
210 215 220

Phe Ala Asn Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser
225 230 235 240

Asp Asn Thr Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala
245 250 255

Gly Val Tyr Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu
260 265 270

Arg Thr Ile Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn
275 280 285

Gly Lys Lys Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser
290 295 300

Pro Ile Lys Thr Asn
305

<210> 5
<211> 927
<212> DNA
<213> Artificial Sequence

<220>
<223> engineered

<220>
<221> misc_feature
<223> A nucleotide sequence encoding SEQ ID NO: 6 with an open reading
frame from 1 to 927.

<400> 5
atggctatcc tagaccttaa gtccctcgtg ctgaacgcca ttaactactg gggccctaag 60
aacaacaacg gcatccaggg cggtgacttc ggctaccca tctctgagaa gcagatcgac 120
actagcatca ttaccttcac ccaccctcgc ttgatccctt acgatcttac tatcccgcag 180
aaccttgaga ccatcttcac cacaacgcag gtgctcacca ataactactga cctccagcaa 240
tcccagaccg tgagctttgc gaagaagacc actaccacga cctcaactag caccgaccaac 300
ggttggacag aaggaggcaa gatcagcgac acgctggagg agaaagtttc ggtttagcatt 360

38_21_56191_APCT_SequenceListing_ST25.txt

```
ccgttcacgc gtgagggtgg cgggaagaac tcgactacca tagaggccaa cttcgcacac      420
aactctagca ccactaccgc ccagcaagca agcactgaca ttgagtggaa cattagccaa      480
ccggtgctgg ttctccctc taaacaagtt gtcgcgaccc ttgtgatcat gggaggcaac      540
tttaccatcc ctatggactt gatgaccacg attgatagta cagagcacta ctcccactac      600
tccggttacc ctatcctcac ctggatctcg tccccagata actcttactc cggtcctttt      660
atgtcatggt actttgcaaa ctggcctaac cttccgagtg gattcggccc actgaatagt      720
gataacacgg tcacatacac tggctctgtc gtgtcccaag tttcggccgg tgtctacgct      780
accgtccggt tcgatcagta tgacattcac aatctccgta ctatcgagaa gacttggtat      840
gctcgccatg cgacgctgca taatggcaag aagatttcta tcaacaatgt cacggaaatg      900
gctccaacat cccctatcaa gacaaat                                           927
```

<210> 6
 <211> 309
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> engineered

<220>
 <221> misc_feature
 <223> The amino acid sequence translation of the open reading frame set forth as SEQ ID NO: 5.

<400> 6

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
 1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
 20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Phe Thr His
 35 40 45

Pro Arg Leu Ile Pro Tyr Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
 50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
 65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
 85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
 100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
 115 120 125

38_21_56191_APCT_SequenceListing_ST25.txt

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Ser Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp
195 200 205

Ile Ser Ser Pro Asp Asn Ser Tyr Ser Gly Pro Phe Met Ser Trp Tyr
210 215 220

Phe Ala Asn Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser
225 230 235 240

Asp Asn Thr Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala
245 250 255

Gly Val Tyr Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu
260 265 270

Arg Thr Ile Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn
275 280 285

Gly Lys Lys Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser
290 295 300

Pro Ile Lys Thr Asn
305

<210> 7
<211> 918
<212> DNA
<213> Artificial Sequence

<220>
<223> engineered

<220>
<221> misc_feature
<223> A nucleotide sequence encoding SEQ ID NO: 8 with an open reading
frame from 1 to 918.

<400> 7
atggctatcc tagaccttaa gtcctcgtg ctgaacgcca ttaactactg gggccctaag 60

aacaacaacg gcatccaggg cgggtgacttc ggctacccca tctctgagaa gcagatcgac 120

38_21_56191_APCT_SequenceListing_ST25.txt

```

actagcatca ttacctccac ccaccctcgc ttgatcccc acgatcttac tatcccgcag      180
aaccttgaga ccatcttcac cacaacgcag gtgctcacca ataacactga cctccagcaa      240
tcccagaccg tgagctttgc gaagaagacc actaccacga cctcaactag cacgaccaac      300
ggttggacag aaggaggcaa gatcagcgac acgctggagg agaaagtttc ggtttagcatt      360
ccgttcacg  gtgaggggtg cggaagaac tcgactacca tagaggccaa cttcgcacac      420
aactctagca ccactacctt ccagcaagca agcactgaca ttgagtggaa cattagccaa      480
ccggtccttg tgcctccccg caaacagggtt gttgccactc tcgttatcat ggggtggcaac      540
ttcactattc ctatggatct tatgactacc attgactcta ctgagcacta ctctggctac      600
cccatttctc cttggatctc ttctcctgac aatagctaca acgggtccatt catgtcatgg      660
tacttcgcta actggccgaa tctcccttct ggctttggtc ctcttaactc tgataaact      720
gtgacctaca ctggctctgt cgtcagtcag gtctctgccg gtgtgtacgc aactgttcgc      780
ttcgatcagt atgacatcca taatctcagg actattgaga agacctggta cgctcgtcat      840
gcgacgcttc acaacggcaa gaagatcagc atcaataacg tgacagaaat ggcccctacc      900
agcccgatca agactaac                                                    918

```

```

<210> 8
<211> 306
<212> PRT
<213> Artificial Sequence

```

```

<220>
<223> engineered

```

```

<220>
<221> MISC_FEATURE
<223> TIC807M2

```

```

<220>
<221> misc_feature
<223> The amino acid sequence translation of the open reading frame set
      forth as SEQ ID NO: 7.

```

```

<400> 8

```

```

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
 1           5           10          15

```

```

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
      20          25          30

```

```

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
      35          40          45

```

```

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
      50          55          60

```

```

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65          70          75          80

```

38_21_56191_APCT_SequenceListing_ST25.txt

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 9
<211> 918
<212> DNA
<213> Artificial Sequence

<220>

<223> engineered

<220>

<221> misc_feature

<223> A nucleotide sequence encoding SEQ ID NO: 10 with an open reading frame from 1 to 918.

<400> 9

```

atggctatcc tagaccttaa gtccctcgtg ctgaacgcca ttaactactg gggccctaag      60
aacaacaacg gcatccaggg cggtgacttc ggctacccca tctctgagaa gcagatcgac      120
actagcatca ttacctccac ccaccctcgc ttgatccccc acgatcttac tatcccgcag      180
aaccttgaga ccatcttcac cacaacgcag gtgctcacca ataactactga cctccagcaa      240
tcccagaccg tgagctttgc gaagaagacc actaccgcga cctcaactag caccgaccaac      300
ggttggacag aaggaggcaa gatcagcgac acgctggagg agaaagtttc ggtagcatt      360
ccgttcatcg gtgaggggtg cggaagaac tcgactacca tagaggccaa cttcgcacac      420
aactctagca ccactacctt ccagcaagca agcactgaca ttgagtggaa cattagccaa      480
ccggtccttg tgcctccccg caaacagggt gttgccactc tcgttatcat gggtaggcaac      540
ttcactattc ctatggatct tatgactacc attgactcta ctgagcacta ctctggctac      600
cccatttctc cttggatctc ttctcctgac aatagctaca acgggtccatt catgtcatgg      660
tacttcgcta actggccgaa tctcccttct ggctttgggtc ctcttaactc tgataaact      720
gtgacctaca ctggctctgt cgtcagtcag gtctctgccg gtgtgtacgc aactgttcgc      780
ttcgatcagt atgacatcca taatctcagg actattgaga agacctggta cgctcgtcat      840
gcgacgcttc acaacggcaa gaagatcagc atcaataacg tgacagaaat ggcccctacc      900
agcccgatca agactaac                                     918

```

<210> 10

<211> 306

<212> PRT

<213> Artificial Sequence

<220>

<223> engineered

<220>

<221> misc_feature

<223> The amino acid sequence translation of the open reading frame set forth as SEQ ID NO: 9.

<400> 10

```

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1           5           10           15

```

```

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20           25           30

```

```

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35           40           45

```

38_21_56191_APCT_SequenceListing_ST25.txt

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
 50 55 60
 Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
 65 70 75 80
 Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
 85 90 95
 Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
 100 105 110
 Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
 115 120 125
 Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
 130 135 140
 Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
 145 150 155 160
 Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
 165 170 175
 Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
 180 185 190
 Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
 195 200 205
 Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
 210 215 220
 Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
 225 230 235 240
 Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
 245 250 255
 Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
 260 265 270
 Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
 275 280 285
 Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
 290 295 300
 Thr Asn
 305

38_21_56191_APCT_SequenceListing_ST25.txt

<210> 11
 <211> 918
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> engineered

<220>
 <221> misc_feature
 <223> A nucleotide sequence encoding SEQ ID NO: 12 with an open reading frame from 1 to 918.

```
<400> 11
atggctatcc tagaccttaa gtccctcgtg ctgaacgcc a ttaactactg gggccctaag      60
aacaacaacg gcatccaggg cggtgacttc ggctaccca tctctgagaa gcagatcgac      120
actagcatca ttacctccac ccaccctcgc ttgatcccc acgatcttac tatccgcgac      180
aaccttgaga ccatcttcac cacaacgcag gtgctcacca ataactactga cctccagcaa      240
tcccagaccg tgagctttgc gaagaagacc actaccacga ccgcaactag cacgaccaac      300
ggttggacag aaggaggcaa gatcagcgac acgctggagg agaaagtttc ggtttagcatt      360
ccgttcatcg gtgaggggtg cggaagaac tcgactacca tagaggccaa cttcgcacac      420
aactctagca ccactacctt ccagcaagca agcactgaca ttgagtggaa cattagccaa      480
ccggtccttg tgcctccccg caaacagggtt gttgccactc tcgttatcat ggggtggcaac      540
ttcactattc ctatggatct tatgactacc attgactcta ctgagcacta ctctggctac      600
cccatcttca cttggatctc ttctcctgac aatagctaca acggtccatt catgtcatgg      660
tacttcgcta actggccgaa tctcccttct ggctttgggtc ctcttaactc tgataaact      720
gtgacctaca ctggctctgt cgtcagtcag gtctctgccg gtgtgtacgc aactgttcgc      780
ttcgatcagt atgacatcca taatctcagg actattgaga agacctggta cgctcgtcat      840
gcgacgcttc acaacggcaa gaagatcagc atcaataacg tgacagaaat ggcccctacc      900
agcccgatca agactaac                                     918
```

<210> 12
 <211> 306
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> engineered

<220>
 <221> misc_feature
 <223> The amino acid sequence translation of the open reading frame set forth as SEQ ID NO: 11.

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

38_21_56191_APCT_SequenceListing_ST25.txt

Trp Gly Pro Lys₂₀ Asn Asn Asn Gly₂₅ Ile₂₅ Gln Gly Gly Asp₃₀ Phe Gly Tyr
Pro Ile Ser₃₅ Glu Lys Gln Ile₄₀ Asp₄₀ Thr Ser Ile Ile₄₅ Thr Ser Thr His
Pro Arg₅₀ Leu Ile Pro His₅₅ Asp₅₅ Leu Thr Ile Pro₆₀ Gln Asn Leu Glu Thr
Ile₆₅ Phe Thr Thr Thr₇₀ Gln Val Leu Thr Asn₇₅ Asn Thr Asp Leu Gln₈₀ Gln
Ser Gln Thr Val₈₅ Ser Phe Ala Lys Lys₉₀ Thr Thr Thr Thr Thr₉₅ Ala Thr
Ser Thr Thr₁₀₀ Asn Gly Trp Thr Glu₁₀₅ Gly Gly Lys Ile Ser₁₁₀ Asp Thr Leu
Glu Glu Lys₁₁₅ Val Ser Val Ser₁₂₀ Ile Pro Phe Ile Gly₁₂₅ Glu Gly Gly Gly
Lys₁₃₀ Asn Ser Thr Thr Ile₁₃₅ Glu Ala Asn Phe Ala₁₄₀ His Asn Ser Ser Thr
Thr₁₄₅ Thr Phe Gln Gln₁₅₀ Ala Ser Thr Asp Ile₁₅₅ Glu Trp Asn Ile Ser₁₆₀ Gln
Pro Val Leu Val₁₆₅ Pro Pro Arg Lys Gln₁₇₀ Val Val Ala Thr Leu₁₇₅ Val Ile
Met Gly Gly₁₈₀ Asn Phe Thr Ile Pro₁₈₅ Met Asp Leu Met Thr₁₉₀ Thr Ile Asp
Ser Thr Glu₁₉₅ His Tyr Ser Gly₂₀₀ Tyr Pro Ile Leu Thr₂₀₅ Trp Ile Ser Ser
Pro Asp₂₁₀ Asn Ser Tyr Asn Gly₂₁₅ Pro Phe Met Ser₂₂₀ Trp Tyr Phe Ala Asn
Trp₂₂₅ Pro Asn Leu Pro₂₃₀ Ser Gly Phe Gly Pro₂₃₅ Leu Asn Ser Asp Asn Thr₂₄₀
Val Thr Tyr Thr₂₄₅ Gly Ser Val Val Ser₂₅₀ Gln Val Ser Ala Gly₂₅₅ Val Tyr
Ala Thr Val₂₆₀ Arg Phe Asp Gln Tyr₂₆₅ Asp Ile His Asn Leu Arg₂₇₀ Thr Ile
Glu Lys Thr₂₇₅ Trp Tyr Ala Arg₂₈₀ His Ala Thr Leu His₂₈₅ Asn Gly Lys Lys

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Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 13
<211> 918
<212> DNA
<213> Artificial Sequence

<220>
<223> engineered

<220>
<221> misc_feature
<223> A nucleotide sequence encoding SEQ ID NO: 14 with an open reading frame from 1 to 918.

<400> 13
atggctatcc tagaccttaa gtccctcgtg ctgaacgcca ttaactactg gggccctaag 60
aacaacaacg gcatccaggg cggtgacttc ggctacccca tctctgagaa gcagatcgac 120
actagcatca ttacctccac ccaccctcgc ttgatccccc acgatcttac tatcccgag 180
aaccttgaga ccatcttcac cacaacgcag gtgctcacca ataactga cctccagcaa 240
tcccagaccg tgagctttgc gaagaagacc actaccacga cctcaactag cagcaccaac 300
ggttggacag aaggaggcaa gatcagcgac acgctggagg agaaagtttc ggtttagcatt 360
ccgttcatcg gtgagggtgg cgggaagaac tcgactacca tagaggccaa cttcgcacac 420
aactctagca ccactaccgc ccagcaagca agcactgaca ttgagtggaa cattagccaa 480
ccggtccttg tgcctccccg caaacagggtt gttgccactc tcgttatcat ggggtggcaac 540
ttcactattc ctatggatct tatgactacc attgactcta ctgagcacta ctctgggtac 600
cccattctca cttggatctc ttctcctgac aatagctaca acggtccatt catgtcatgg 660
tacttcgcta actggccgaa tctcccttct ggctttggtc ctcttaactc tgataaact 720
gtgacctaca ctggctctgt cgtcagtcag gtctctgccg gtgtgtacgc aactgttcgc 780
ttcgatcagt atgacatcca taatctcagg actattgaga agacctgga cgctcgtcat 840
gcgacgcttc acaacggcaa gaagatcagc atcaataacg tgacagaaat ggcccctacc 900
agccccgatca agactaac 918

<210> 14
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<220>

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<221> misc_feature

<223> The amino acid sequence translation of the open reading frame set forth as SEQ ID NO: 13.

<400> 14

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

38_21_56191_APCT_SequenceListing_ST25.txt

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 15
<211> 918
<212> DNA
<213> Artificial Sequence

<220>
<223> engineered

<220>
<221> misc_feature
<223> A nucleotide sequence encoding SEQ ID NO: 16 with an open reading frame from 1 to 918.

<400> 15
atggctatcc tagaccttaa gtcctctgtg ctgaacgcc ttaactactg gggccctaag 60
aacaacaacg gcatccaggg cggtgacttc ggctacccca tctctgagaa gcagatcgac 120
actagcatca ttacctccac ccaccctcgc ttgatccccc acgatcttac tatcccgcag 180
aaccttgaga ccatcttcac cacaacgcag gtgctcacca ataactactga cctccagcaa 240
tcccagaccg tgagctttgc gaagaagacc actaccacga ccgcaactag cagcaccaac 300
ggttggacag aaggaggcaa gatcagcgac acgctggagg agaaagtttc ggtttagcatt 360
ccgttcatcg gtgagggtgg cggaagaac tcgactacca tagaggccaa cttcgcacac 420
aactctagca ccactaccgc ccagcaagca agcactgaca ttgagtggaa cattagccaa 480
ccgggtccttg tgcctccccg caaacagggtt gttgccactc tcgttatcat ggggtggcaac 540
ttcactattc ctatggatct tatgactacc attgactcta ctgagcacta ctctggctac 600
cccatttctca cttggatctc ttctcctgac aatagctaca acggtccatt catgtcatgg 660
tacttcgcta actggccgaa tctcccttct ggctttgggtc ctcttaactc tgataaact 720
gtgacctaca ctggctctgt cgtcagtcag gtctctgccg gtgtgtacgc aactgttcgc 780
ttcgatcagt atgacatcca taatctcagg actattgaga agacctggta cgctcgtcat 840
gcgacgcttc acaacggcaa gaagatcagc atcaataacg tgacagaaat ggcccctacc 900
agcccgatca agactaac 918

<210> 16
<211> 306

<212> PRT
 <213> Artificial Sequence

 <220>
 <223> engineered

 <220>
 <221> MISC_FEATURE
 <223> TIC807M8

 <220>
 <221> misc_feature
 <223> The amino acid sequence translation of the open reading frame set
 forth as SEQ ID NO: 15.

<400> 16

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
 1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
 20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
 35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
 50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
 65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ala Thr
 85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
 100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
 115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
 130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
 145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
 165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
 180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
 195 200 205

38_21_56191_APCT_SequenceListing_ST25.txt

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 17
<211> 918
<212> DNA
<213> Artificial Sequence

<220>
<223> engineered

<220>
<221> misc_feature
<223> A nucleotide sequence encoding SEQ ID NO: 18 with an open reading frame from 1 to 918.

<400> 17
atggctatcc tagaccttaa gtccctcgtg ctgaacgcca ttaactactg gggccctaag 60
aacaacaacg gcatccaggg cggtgacttc ggctacccca tctctgagaa gcagatcgac 120
actagcatca ttacctccac ccaccctcgc ttgatccccc acgatcttac tatcccgag 180
aaccttgaga ccatcttcac cacaacgcag gtgctcacca ataactactga cctccagcaa 240
tcccagaccg tgagctttgc gaagaagacc actaccgcga cctcaactag caccgaccaac 300
ggttggacag aaggaggcaa gatcagcgac acgctggagg agaaagtttc ggtttagcatt 360
ccgttcatcg gtgagggtgg cggaagaac tcgactacca tagaggccaa cttcgcacac 420
aactctagca ccactaccgc ccagcaagca agcactgaca ttgagtggaa cattagccaa 480
ccgggtccttg tgcctccccg caaacagggtt gttgccactc tcgttatcat ggggtggcaac 540
ttcactattc ctatggatct tatgactacc attgactcta ctgagcacta ctctgggtac 600
cccatttca cttggatctc ttctcctgac aatagctaca acggtccatt catgtcatgg 660
tacttcgcta actggccgaa tctcccttct ggctttggtc ctcttaactc tgataaact 720

38_21_56191_APCT_SequenceListing_ST25.txt

gtgacctaca ctggctctgt cgtcagtcag gtctctgccg gtgtgtacgc aactgttcgc 780
 ttcgatcagt atgacatcca taatctcagg actattgaga agacctggta cgctcgtcat 840
 gcgacgcttc acaacggcaa gaagatcagc atcaataacg tgacagaaat ggcccctacc 900
 agcccgatca agactaac 918

<210> 18
 <211> 306
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> engineered

<220>
 <221> misc_feature
 <223> The amino acid sequence translation of the open reading frame set forth as SEQ ID NO: 17.

<400> 18

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
 1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
 20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
 35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
 50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
 65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
 85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
 100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
 115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
 130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
 145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
 165 170 175

38_21_56191_APCT_SequenceListing_ST25.txt

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 19
<211> 918
<212> DNA
<213> Artificial Sequence

<220>
<223> engineered

<220>
<221> misc_feature
<223> A nucleotide sequence encoding SEQ ID NO: 20 with an open reading
frame from 1 to 918.

<400> 19
atggctatcc tagaccttaa gtccctcgtg ctgaacgcca ttaactactg gggccctaag 60
aacaacaacg gcatccaggg cggtgacttc ggctacccca tctctgagaa gcagatcgac 120
actagcatca ttacctccac ccaccctcgc ttgatccccc acgatcttac tatcccgag 180
aaccttgaga ccatcttcac cacaacgcag gtgctcacca ataactga cctccagcaa 240
tcccagaccg tgagctttgc gaagaagacc actaccacga cctcaactag cagcaccaac 300
ggttggacag aaggaggcaa gatcagcgac acgctggagg agaaagtttc ggtagcatt 360
ccgttcatcg gtgagggtgg cggaagaac tcgactacca tagaggccaa cttcgcacac 420
aactctagca ccactacctt ccaggaggca agcactgaca ttgagtggaa cattagccaa 480

38_21_56191_APCT_SequenceListing_ST25.txt

```
ccggtccttg tgcctccccg caaacagggtt gttgccactc tcgttatcat ggggtggcaac      540
ttcactattc ctatggatct tatgactacc attgactcta ctgagcacta ctctggctac      600
cccatcttca cttggatctc ttctcctgac aatagctaca acgggtccatt catgtcatgg      660
tacttcgcta actggccgaa tctcccttct ggctttggtc ctcttaactc tgataaact      720
gtgacctaca ctggctctgt cgtcagtcag gtctctgccg gtgtgtacgc aactgttcgc      780
ttcgatcagt atgacatcca taatctcagg actattgaga agacctggta cgctcgtcat      840
gcgacgcttc acaacggcaa gaagatcagc atcaataacg tgacagaaat ggcccctacc      900
agcccgatca agactaac                                          918
```

<210> 20
 <211> 306
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> engineered

<220>
 <221> misc_feature
 <223> The amino acid sequence translation of the open reading frame set forth as SEQ ID NO: 19.

<400> 20

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
 1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
 20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
 35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
 50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
 65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
 85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
 100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
 115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
 130 135 140

38_21_56191_APCT_SequenceListing_ST25.txt

Thr Thr Phe Gln Glu Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 21
<211> 918
<212> DNA
<213> Artificial Sequence

<220>
<223> engineered

<220>
<221> misc_feature
<223> A nucleotide sequence encoding SEQ ID NO: 22 with an open reading
frame from 1 to 918.

<400> 21
atggctatcc tagaccttaa gtcctctgtg ctgaacgcca ttaactactg gggccctaag 60
aacaacaacg gcatccaggg cggtgacttc ggctacccca tctctgagaa gcagatcgac 120
actagcatca ttacctccac ccaccctcgc ttgatcccc acgatcttac tatcccgag 180
aaccttgaga ccatcttcac cacaacgcag gtgctcacca ataactga cctccagcaa 240

38_21_56191_APCT_SequenceListing_ST25.txt

```
tcccagaccg tgagctttgc gaagaagacc actaccgcga cctcaactag caccgaccaac      300
ggttggacag aaggaggcaa gatcagcgac acgctggagg agaaagtttc ggtagcatt      360
ccgttcatcg gtgaggggtg cggaagaac tcgactacca tagaggccaa cttcgcacac      420
aactctagca ccactacctt ccaggcagca agcactgaca ttgagtggaa cattagccaa      480
ccgggtccttg tgcctccccg caaacagggtt gttgccactc tcgttatcat ggggtggcaac      540
ttcactattc ctatggatct tatgactacc attgactcta ctgagcacta ctctggctac      600
cccattctca cttggatctc ttctcctgac aatagctaca acgggtccatt catgtcatgg      660
tacttcgcta actggccgaa tctcccttct ggctttggtc ctcttaactc tgataaact      720
gtgacctaca ctggctctgt cgtcagtcag gtctctgccg gtgtgtacgc aactgttcgc      780
ttcgatcagt atgacatcca taatctcagg actattgaga agacctggta cgctcgtcat      840
gcgacgcttc acaacggcaa gaagatcagc atcaataacg tgacagaaat ggcccctacc      900
agcccgatca agactaac      918
```

<210> 22
 <211> 306
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> engineered

<220>
 <221> misc_feature
 <223> The amino acid sequence translation of the open reading frame set forth as SEQ ID NO: 21.

<400> 22

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
 1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
 20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
 35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
 50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
 65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
 85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
 100 105 110

38_21_56191_APCT_SequenceListing_ST25.txt

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Ala Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 23
<211> 918
<212> DNA
<213> Artificial Sequence

<220>
<223> engineered

<220>
<221> misc_feature
<223> A nucleotide sequence encoding SEQ ID NO: 24 with an open reading frame from 1 to 918.

38_21_56191_APCT_SequenceListing_ST25.txt

```

<400> 23
atgggtatcc tagaccttaa gtccctcgtg ctgaacgcca ttaactactg gggccctaag      60
aacaacaacg gcatccaggg cggtgacttc ggctacccca tctctgagaa gcagatcgac      120
actagcatca ttacctccac ccaccctcgc ttgatccccc acgatcttac tatcccgag      180
aaccttgaga ccatcttcac cacaacgcag gtgctcacca ataactga cctccagcaa      240
tcccagaccg tgagctttgc gaagaagacc actaccgga cctcaactag cagcaccaac      300
ggttggacag aaggaggcaa gatcagcgac acgctggagg agaaagtttc ggttagcatt      360
ccgttcatcg gtgaggggtg cggaagaac tcgactacca tagaggccaa cttcgcacac      420
aactctagca ccactacctt ccaggaggca agcactgaca ttgagtggaa cattagccaa      480
ccggtccttg tgcctccccg caaacagggtt gttgccactc tcgttatcat ggggtggcaac      540
ttcactattc ctatggatct tatgactacc attgactcta ctgagcacta ctctggctac      600
cccatttctca cttggatctc ttctcctgac aatagctaca acggtccatt catgtcatgg      660
tacttcgcta actggccgaa tctcccttct ggctttggtc ctcttaactc tgataaact      720
gtgacctaca ctggctctgt cgtcagtcag gtctctgccg gtgtgtacgc aactgttcgc      780
ttcgatcagt atgacatcca taatctcagg actattgaga agacctggta cgctcgtcat      840
gcgacgcttc acaacggcaa gaagatcagc atcaataacg tgacagaaat ggcccctacc      900
agcccgatca agactaac                                          918

```

```

<210> 24
<211> 306
<212> PRT
<213> Artificial Sequence

```

```

<220>
<223> engineered

```

```

<220>
<221> misc_feature
<223> The amino acid sequence translation of the open reading frame set
      forth as SEQ ID NO: 23.

```

```

<400> 24
Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
 1             5             10            15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
      20             25            30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
      35             40            45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
      50             55            60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65             70             75            80

```

38_21_56191_APCT_SequenceListing_ST25.txt

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Glu Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 25
<211> 918
<212> DNA
<213> Artificial Sequence

<220>

<223> engineered

<220>

<221> misc_feature

<223> A nucleotide sequence encoding SEQ ID NO: 26 with an open reading frame from 1 to 918.

<400> 25

```

atggctatcc tagaccttaa gtccctcgtg ctgaacgcca ttaactactg gggccctaag      60
aacaacaacg gcatccaggg cggtgacttc ggctacccca tctctgagaa gcagatcgac      120
actagcatca ttacctccac ccaccctcgc ttgatccccc acgatcttac tatcccgcag      180
aaccttgaga ccatcttcac cacaacgcag gtgctcacca ataactactga cctccagcaa      240
tcccagaccg tgagctttgc gaagaagacc actaccacga cgcgaactag cagcaccaac      300
ggttggacag aaggaggcaa gatcagcgac acgctggagg agaaagtctc ggtagcatt      360
ccgttcacg  gtgaggggtg cggaagaac tcgactacca tagaggccaa cttcgcacac      420
aactctagca ccactaccgc ccagcaagca agcactgaca ttgagtggaa cattagccaa      480
ccggtccttg tgcctccccg caaacagggt gttgccactc tcgttatcat gggtaggaac      540
ttcactattc ctatggatct tatgactacc attgactcta ctgagcacta ctctggctac      600
cccattctca cttggatctc ttctcctgac aatagctaca gcggtccatt catgtcatgg      660
tacttcgcta actggccgaa tctcccttct ggctttgggtc ctcttaactc tgataaact      720
gtgacctaca ctggctctgt cgtcagtcag gtctctgccg gtgtgtacgc aactgttcgc      780
ttcgatcagt atgacatcca taatctcagg actattgaga agacctggta cgctcgtcat      840
gcgacgcttc acaacggcaa gaagatcagc atcaataacg tgacagaaat ggcccctacc      900
agcccgatca agactaac                                     918

```

<210> 26

<211> 306

<212> PRT

<213> Artificial Sequence

<220>

<223> engineered

<220>

<221> misc_feature

<223> The amino acid sequence translation of the open reading frame set forth as SEQ ID NO: 25.

<400> 26

```

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1           5           10          15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
          20          25          30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
          35          40          45

```

38_21_56191_APCT_SequenceListing_ST25.txt

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
 50 55 60
 Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
 65 70 75 80
 Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ala Thr
 85 90 95
 Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
 100 105 110
 Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
 115 120 125
 Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
 130 135 140
 Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
 145 150 155 160
 Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
 165 170 175
 Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
 180 185 190
 Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
 195 200 205
 Pro Asp Asn Ser Tyr Ser Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
 210 215 220
 Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
 225 230 235 240
 Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
 245 250 255
 Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
 260 265 270
 Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
 275 280 285
 Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
 290 295 300
 Thr Asn
 305

38_21_56191_APCT_SequenceListing_ST25.txt

<210> 27
 <211> 918
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> engineered

<220>
 <221> misc_feature
 <223> A nucleotide sequence encoding SEQ ID NO: 28 with an open reading frame from 1 to 918.

```
<400> 27
atggctatcc tagaccttaa gtccctcgtg ctgaacgcc a ttaactactg gggccctaag      60
aacaacaacg gcatccaggg cggtgacttc ggctacccca tctctgagaa gcagatcgac      120
actagcatca ttacctccac ccaccctcgc ttgatccccc acgatcttac tatcccgag      180
aaccttgaga ccatcttcac cacaacgcag gtgctcacca ataactactga cctccagcaa      240
tcccagaccg tgagctttgc gaagaagacc actaccacga ccgcaactag cacgaccaac      300
ggttggacag aaggaggcaa gatcagcgac acgctggagg agaaagtttc ggtttagcatt      360
ccgttcatcg gtgaggggtg cggaagaac tcgactacca tagaggccaa cttcgcacac      420
aactctagca ccactaccgc ccagcaagca agcactgaca ttgagtggaa cattagccaa      480
ccggtccttg tgcctccccg caaacagggtt gttgccactc tcgttatcat ggggtggcaac      540
ttcactattc ctatggatct tatgactacc attgactcta ctgagcacta ctctggctac      600
cccatcttca cttggatctc ttctcctgac aatagctaca gcggtcgatt catgtcatgg      660
tacttcgcta actggccgaa tctcccttct ggctttgggtc ctcttaactc tgataaact      720
gtgacctaca ctggctctgt cgtcagtcag gtctctgccg gtgtgtacgc aactgttcgc      780
ttcgatcagt atgacatcca taatctcagg actattgaga agacctggta cgctcgtcat      840
gcgacgcttc acaacggcaa gaagatcagc atcaataacg tgacagaaat ggcccctacc      900
agcccgatca agactaac                                     918
```

<210> 28
 <211> 306
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> engineered

<220>
 <221> misc_feature
 <223> The amino acid sequence translation of the open reading frame set forth as SEQ ID NO: 27.

```
<400> 28
Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1          5          10          15
```

38_21_56191_APCT_SequenceListing_ST25.txt

Trp Gly Pro Lys₂₀ Asn Asn Asn Gly₂₅ Ile₂₅ Gln Gly Gly Asp₃₀ Phe Gly Tyr
Pro Ile Ser₃₅ Glu Lys Gln Ile₄₀ Asp₄₀ Thr Ser Ile Ile₄₅ Thr₄₅ Ser Thr His
Pro Arg₅₀ Leu Ile Pro His₅₅ Asp₅₅ Leu Thr Ile Pro₆₀ Gln₆₀ Asn Leu Glu Thr
Ile₆₅ Phe Thr Thr Thr₇₀ Gln₇₀ Val Leu Thr Asn₇₅ Asn₇₅ Thr Asp₈₀ Leu₈₀ Gln₈₀ Gln₈₀
Ser Gln Thr Val₈₅ Ser₈₅ Phe Ala Lys Lys₉₀ Thr₉₀ Thr Thr Thr Thr₉₅ Ala₉₅ Thr
Ser Thr Thr Asn₁₀₀ Gly Trp Thr Glu₁₀₅ Gly₁₀₅ Gly Lys Ile Ser₁₁₀ Asp₁₁₀ Thr Leu
Glu Glu Lys₁₁₅ Val Ser Val Ser₁₂₀ Ile₁₂₀ Pro Phe Ile Gly₁₂₅ Glu₁₂₅ Gly Gly Gly
Lys₁₃₀ Asn₁₃₀ Ser Thr Thr Ile₁₃₅ Glu₁₃₅ Ala Asn Phe Ala₁₄₀ His₁₄₀ Asn Ser Ser Thr
Thr₁₄₅ Thr Ala Gln Gln₁₅₀ Ala₁₅₀ Ser Thr Asp Ile₁₅₅ Glu₁₅₅ Trp Asn Ile Ser₁₆₀ Gln₁₆₀
Pro Val Leu Val₁₆₅ Pro₁₆₅ Pro Arg Lys Gln₁₇₀ Val₁₇₀ Val Ala Thr Leu₁₇₅ Val₁₇₅ Ile
Met Gly Gly Asn₁₈₀ Phe Thr Ile Pro₁₈₅ Met₁₈₅ Asp Leu Met Thr₁₉₀ Thr₁₉₀ Ile Asp
Ser Thr Glu₁₉₅ His Tyr Ser Gly₂₀₀ Tyr₂₀₀ Pro Ile Leu Thr₂₀₅ Trp₂₀₅ Ile Ser Ser
Pro Asp₂₁₀ Asn Ser Tyr Ser₂₁₅ Gly₂₁₅ Arg Phe Met Ser₂₂₀ Trp₂₂₀ Tyr Phe Ala Asn
Trp₂₂₅ Pro Asn Leu Pro₂₃₀ Ser₂₃₀ Gly Phe Gly Pro₂₃₅ Leu₂₃₅ Asn Ser Asp Asn Thr₂₄₀
Val Thr Tyr Thr₂₄₅ Gly₂₄₅ Ser Val Val Ser₂₅₀ Gln₂₅₀ Val Ser Ala Gly₂₅₅ Val₂₅₅ Tyr
Ala Thr Val₂₆₀ Arg₂₆₀ Phe Asp Gln Tyr₂₆₅ Asp₂₆₅ Ile His Asn Leu₂₇₀ Arg₂₇₀ Thr Ile
Glu Lys Thr₂₇₅ Trp Tyr Ala Arg₂₈₀ His₂₈₀ Ala Thr Leu His₂₈₅ Asn₂₈₅ Gly Lys Lys

38_21_56191_APCT_SequenceListing_ST25.txt

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 29
<211> 918
<212> DNA
<213> Artificial Sequence

<220>
<223> engineered

<220>
<221> misc_feature
<223> A nucleotide sequence encoding SEQ ID NO: 30 with an open reading frame from 1 to 918.

<400> 29
atggctatcc tagaccttaa gtccctcgtg ctgaacgcca ttaactactg gggccctaag 60
aacaacaacg gcatccaggg cggtgacttc ggctacccca tctctgagaa gcagatcgac 120
actagcatca ttacctccac ccaccctcgc ttgatccccc acgatcttac tatcccgag 180
aaccttgaga ccatcttcac cacaacgcag gtgctcacca ataactga cctccagcaa 240
tcccagaccg tgagctttgc gaagaagacc actaccacga cgcgaactag cagcaccaac 300
ggttggacag aaggaggcaa gatcagcgac acgctggagg agaaagtttc ggtttagcatt 360
ccgttcatcg gtgagggtgg cgggaagaac tcgactacca tagaggccaa cttcgcacac 420
aactctagca ccactaccgc ccagcaagca agcactgaca ttgagtggaa cattagccaa 480
ccggtccttg tgcctccccg caaacagggtt gttgccactc tcgttatcat ggggtggcaac 540
ttcactattc ctatggatct tatgactacc attgactcta ctgagcacta ctctggctac 600
cccattctca cttggatctc ttctcctgac aatagctaca gcggctcgatt catgtcatgg 660
tacttcgcta actggccgaa tctcccttct ggctttggtc ctcttaactc tgataaact 720
gtgacctaca ctggctctgt cgccagtcag gtctctgccg gtgtgtacgc aactgttcgc 780
ttcgatcagt atgacatcca taatctcagg actattgaga agacctggtg cgctcgtcat 840
gcgacgcttc acaacggcaa gaagatcagc atcaataacg tgacagaaat ggcccctacc 900
agccccgatca agactaac 918

<210> 30
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<220>

<221> MISC_FEATURE

<223> TIC807M10

<220>

<221> misc_feature

<223> The amino acid sequence translation of the open reading frame set forth as SEQ ID NO: 29.

<400> 30

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
 1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
 20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
 35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
 50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
 65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ala Thr
 85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
 100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
 115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
 130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
 145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
 165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
 180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
 195 200 205

Pro Asp Asn Ser Tyr Ser Gly Arg Phe Met Ser Trp Tyr Phe Ala Asn
 210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
 225 230 235 240

38_21_56191_APCT_SequenceListing_ST25.txt

Val Thr Tyr Thr Gly Ser Val Ala Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 31
<211> 918
<212> DNA
<213> Artificial Sequence

<220>
<223> engineered

<220>
<221> misc_feature
<223> A nucleotide sequence encoding SEQ ID NO: 32 with an open reading frame from 1 to 918.

<400> 31
atggctatcc tagaccttaa gtccctcgtg ctgaacgccca ttaactactg gggccctaag 60
aacaacaacg gcatccaggg cgggtgacttc ggctacccca tctctgagaa gcagatcgac 120
actagcatca ttacctccac ccaccctcgc ttgatccccc acgatcttac tatcccgag 180
aaccttgaga ccatcttcac cacaacgcag gtgctcacca ataactactga cctccagcaa 240
tcccagaccg tgagctttgc gaagaagacc actaccacga cgcgaactag cagcaccaac 300
ggttggacag aaggaggcaa gatcagcgac acgctggagg agaaagtctc ggtttagcatt 360
ccgttcacatc gtgaggggtg cgggaagaac tcgactacca tagaggccaa cttcgcacac 420
aactctagca ccactaccgc ccagcaagca agcactgaca ttgagtggaa cattagccaa 480
ccggtccttg tgcctccccg caaacagggtt gttgccactc tcgttatcat ggggtggcaac 540
ttcactattc ctatggatct tatgactacc attgactcta ctgagcacta ctctggctac 600
cccattctca cttggatctc ttctcctgac aatagctaca gcggtcgatt catgtcatgg 660
tacttcgcta actggccgaa tctcccttct ggctttggtc ctcttaactc tgataaact 720
gtgacctaca ctggctctgt cgtcagtcag gtctctgccg gtgtgtacgc aactgttcgc 780
ttcgatcagt atgacatcca taatctctgg actattgaga agacctggta cgctcgatcat 840
gcgacgcttc acaacggcaa gaagatcagc atcaataacg tgacagaaat ggcccctacc 900
agcccgatca agactaac 918

38_21_56191_APCT_SequenceListing_ST25.txt

<210> 32
 <211> 306
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> engineered

<220>
 <221> misc_feature
 <223> The amino acid sequence translation of the open reading frame set forth as SEQ ID NO: 31.

<400> 32

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
 1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
 20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
 35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
 50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
 65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ala Thr
 85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
 100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
 115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
 130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
 145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
 165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
 180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
 195 200 205

38_21_56191_APCT_SequenceListing_ST25.txt

Pro Asp Asn Ser Tyr Ser Gly Arg Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Trp Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 33
<211> 918
<212> DNA
<213> Artificial Sequence

<220>
<223> engineered

<220>
<221> misc_feature
<223> A nucleotide sequence encoding SEQ ID NO: 34 with an open reading frame from 1 to 918.

<400> 33
atggctatcc tagaccttaa gtccctcgtg ctgaacgcca ttaactactg gggccctaag 60
aacaacaacg gcatccaggg cggtgacttc ggctacccca tctctgagaa gcagatcgac 120
actagcatca ttacctccac ccaccctcgc ttgatccccc acgatcttac tatcccgacg 180
aaccttgaga ccatcttcac cacaacgcag gtgtcacca ataactactga cctccagcaa 240
tcccagaccg tgagctttgc gaagaagacc actaccacga cgcgaactag cagaccaaac 300
ggttggacag aaggaggcaa gatcagcgac acgctggagg agaaagtttc ggtttagcatt 360
ccgttcatcg gtgagggtgg cggaagaac tcgactacca tagaggccaa cttcgcacac 420
aactctagca ccactacctc ccaggaagca agcactgaca ttgagtggaa cattagccaa 480
ccgggtccttg tgcctccccg caaacagggtt gttgccactc tcgttatcat ggggtggcaac 540
ttcactattc ctatggatct tatgactacc attgactcta ctgagcacta ctctggctac 600
cccattctca cttggatctc ttctcctgac aatagctaca gcggtcgatt catgtcatgg 660
tacttcgcta actggccgaa tctcccttct ggctttggtc ctcttaactc tgataacact 720

38_21_56191_APCT_SequenceListing_ST25.txt

gtgacctaca ctggctctgt cgtcagtcag gtctctgccg gtgtgtacgc aactgttcgc 780
 ttcgatcagt atgacatcca taatctctgg actattgaga agacctgga cgctcgtcat 840
 gcgacgcttc acaacggcaa gaagatcagc atcaataacg tgacagaaat ggcccctacc 900
 agcccgatca agactaac 918

<210> 34
 <211> 306
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> engineered

<220>
 <221> misc_feature
 <223> TIC807M13

<220>
 <221> misc_feature
 <223> The amino acid sequence translation of the open reading frame set
 forth as SEQ ID NO: 33.

<400> 34

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
 1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
 20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
 35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
 50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
 65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ala Thr
 85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
 100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
 115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
 130 135 140

Thr Thr Ser Gln Glu Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
 145 150 155 160

38_21_56191_APCT_SequenceListing_ST25.txt

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Ser Gly Arg Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Trp Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 35
<211> 918
<212> DNA
<213> Artificial Sequence

<220>
<223> engineered

<220>
<221> misc_feature
<223> A nucleotide sequence encoding SEQ ID NO: 36 with an open reading
frame from 1 to 918.

<400> 35
atggctatcc tagaccttaa gtccctcgtg ctgaacgcca ttaactactg gggccctaag 60
aacaacaacg gcatccaggg cggtgacttc ggctaccca tctctgagaa gcagatcgac 120
actagcatca ttacctccac ccaccctcgc ttgatccccc acgatcttac tatcccgcag 180
aaccttgaga ccatcttcac cacaacgcag gtgctcacca ataactactga cctccagcaa 240
tcccagaccg tgagctttgc gaagaagacc actaccacga ccgcaactag caccgaccaac 300
ggttggacag aaggaggcaa gatcagcgac acgctggagg agaaagtttc ggtttagcatt 360

38_21_56191_APCT_SequenceListing_ST25.txt

```
ccgttcacgc gtaggggtgg cgggaagaac tcgactacca tagaggccaa cttcgcacac      420
aactctagca ccactaccgc ccagcaagca agcactgaca ttgagtggaa cattagccaa      480
ccggtccttg tgcctccccg caaacagggtt gttgccactc tcgttatcat ggggtggcaac      540
ttcactattc ctatggatct tatgactacc attgactcta ctgagcacta ctctggctac      600
cccattctca cttggatctc ttctcctgac aatagctaca gcggtcgatt catgtcatgg      660
tacttcgcta actggccgaa tctcccttct ggctttgggtc ctcttgccctc tgataacact      720
gtgacctaca ctggctctgt cgccagtcag gtctctgccg gtgtgtacgc aactgttcgc      780
ttcgatcagt atgacatcca taatctcagg actattgaga agacctggta cgctcgtcat      840
gcgacgcttc acaacggcaa gaagatcagc atcaataacg tgacagaaat ggcccctacc      900
agcccgatca agactaac                                                    918
```

<210> 36
 <211> 306
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> engineered

<220>
 <221> misc_feature
 <223> The amino acid sequence translation of the open reading frame set forth as SEQ ID NO: 35.

<400> 36

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
 1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
 20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
 35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
 50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
 65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ala Thr
 85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
 100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
 115 120 125

38_21_56191_APCT_SequenceListing_ST25.txt

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Ser Gly Arg Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Ala Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Ala Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 37
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 37

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

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Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Phe Thr His
35 40 45

Pro Arg Leu Ile Pro Tyr Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Ser Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Ser Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

38_21_56191_APCT_SequenceListing_ST25.txt

Thr Asn
305

<210> 38
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 38

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Val Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

38_21_56191_APCT_SequenceListing_ST25.txt

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 39
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 39

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

38_21_56191_APCT_SequenceListing_ST25.txt

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu Phe Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 40
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 40

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

38_21_56191_APCT_SequenceListing_ST25.txt

Pro Arg Leu Met Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
 50 55 60
 Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
 65 70 75 80
 Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
 85 90 95
 Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
 100 105 110
 Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
 115 120 125
 Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
 130 135 140
 Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
 145 150 155 160
 Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
 165 170 175
 Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
 180 185 190
 Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
 195 200 205
 Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
 210 215 220
 Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
 225 230 235 240
 Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
 245 250 255
 Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
 260 265 270
 Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
 275 280 285
 Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
 290 295 300
 Thr Asn
 305

38_21_56191_APCT_SequenceListing_ST25.txt

<210> 41
 <211> 306
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> engineered

<400> 41

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asp Ala Ile Asn Tyr
 1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
 20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
 35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
 50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
 65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
 85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
 100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
 115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
 130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
 145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
 165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
 180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
 195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
 210 215 220

38_21_56191_APCT_SequenceListing_ST25.txt

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 42
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 42

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

38_21_56191_APCT_SequenceListing_ST25.txt

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asp Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 43
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 43

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

38_21_56191_APCT_SequenceListing_ST25.txt

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Ser Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

38_21_56191_APCT_SequenceListing_ST25.txt

<210> 44
 <211> 306
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> engineered

<400> 44

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
 1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
 20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
 35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
 50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
 65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
 85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
 100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
 115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
 130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
 145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
 165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
 180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
 195 200 205

Pro Asp Asn Ser Tyr Asn Gly Arg Phe Met Ser Trp Tyr Phe Ala Asn
 210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
 225 230 235 240

38_21_56191_APCT_SequenceListing_ST25.txt

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 45
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 45

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

38_21_56191_APCT_SequenceListing_ST25.txt

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Thr Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 46
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 46

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

38_21_56191_APCT_SequenceListing_ST25.txt

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Lys Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 47
<211> 306

38_21_56191_APCT_SequenceListing_ST25.txt

<212> PRT
 <213> Artificial Sequence
 <220>
 <223> engineered
 <400> 47
 Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
 1 5 10 15
 Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
 20 25 30
 Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
 35 40 45
 Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
 50 55 60
 Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
 65 70 75 80
 Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
 85 90 95
 Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
 100 105 110
 Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
 115 120 125
 Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
 130 135 140
 Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
 145 150 155 160
 Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
 165 170 175
 Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
 180 185 190
 Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
 195 200 205
 Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
 210 215 220
 Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
 225 230 235 240

Ile Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
 245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
 260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
 275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
 290 295 300

Thr Asn
 305

<210> 48
 <211> 306
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> engineered

<400> 48

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
 1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
 20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
 35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
 50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
 65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
 85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
 100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
 115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
 130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
 145 150 155 160

38_21_56191_APCT_SequenceListing_ST25.txt

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Ile Thr Tyr Lys Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 49
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 49

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

38_21_56191_APCT_SequenceListing_ST25.txt

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Tyr Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 50
<211> 306
<212> PRT
<213> Artificial sequence

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<220>

<223> engineered

<400> 50

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Phe Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

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Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 51
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 51

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Ala
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

38_21_56191_APCT_SequenceListing_ST25.txt

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 52
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 52

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

38_21_56191_APCT_SequenceListing_ST25.txt

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Ala Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 53
<211> 306
<212> PRT
<213> Artificial Sequence

<220>

<223> engineered

<400> 53

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

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Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ala Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 54
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 54

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

38_21_56191_APCT_SequenceListing_ST25.txt

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu Ala Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 55
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 55

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

38_21_56191_APCT_SequenceListing_ST25.txt

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Ala Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 56
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 56

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
 1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
 20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
 35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
 50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
 65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
 85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
 100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
 115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
 130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
 145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
 165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
 180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
 195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
 210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
 225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
 245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
 260 265 270

38_21_56191_APCT_SequenceListing_ST25.txt

Glu Lys Thr Trp Tyr Ala Ala His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 57
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 57

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

38_21_56191_APCT_SequenceListing_ST25.txt

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Ala Asn
305

<210> 58
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 58

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Ala Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
85 90 95

38_21_56191_APCT_SequenceListing_ST25.txt

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 59
<211> 306
<212> PRT
<213> Artificial sequence

<220>
<223> engineered

<400> 59

38_21_56191_APCT_SequenceListing_ST25.txt

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Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1      5      10      15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20      25      30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35      40      45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50      55      60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65      70      75      80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85      90      95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100     105     110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Ala Gly Gly Gly
115     120     125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130     135     140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145     150     155     160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165     170     175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180     185     190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195     200     205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210     215     220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225     230     235     240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245     250     255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260     265     270

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38_21_56191_APCT_SequenceListing_ST25.txt

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 60
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 60

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

38_21_56191_APCT_SequenceListing_ST25.txt

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Ala Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 61
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 61

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
85 90 95

38_21_56191_APCT_SequenceListing_ST25.txt

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Ala Ile Lys
290 295 300

Thr Asn
305

<210> 62
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 62

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

38_21_56191_APCT_SequenceListing_ST25.txt

Trp Gly Pro Lys₂₀ Asn Asn Asn Gly₂₅ Ile₂₅ Gln Gly Gly Asp₃₀ Phe Gly Tyr
Pro Ile Ser₃₅ Glu Lys Gln Ile₄₀ Asp₄₀ Thr Ser Ile Ile₄₅ Thr₄₅ Ser Thr His
Pro Arg₅₀ Leu Ile Pro His₅₅ Asp₅₅ Leu Thr Ile Pro₆₀ Gln₆₀ Asn Leu Glu Thr
Ile₆₅ Phe Thr Thr Thr₇₀ Gln₇₀ Val Leu Thr Asn₇₅ Asn₇₅ Thr Asp Leu Gln₈₀ Gln₈₀
Ser Gln Thr Val₈₅ Ser₈₅ Phe Ala Lys Lys₉₀ Thr₉₀ Thr Thr Thr Thr₉₅ Ser₉₅ Thr
Ser Thr Thr₁₀₀ Asn₁₀₀ Gly Trp Thr Glu Gly₁₀₅ Gly₁₀₅ Lys Ile Ser Asp₁₁₀ Thr Leu
Glu Glu Lys₁₁₅ Val Ser Val Ser₁₂₀ Ile₁₂₀ Pro Phe Ile Gly₁₂₅ Glu₁₂₅ Gly Gly Gly
Lys₁₃₀ Asn₁₃₀ Ser Thr Thr Ile₁₃₅ Glu₁₃₅ Ala Asn Phe Ala₁₄₀ His₁₄₀ Asn Ser Ser Thr
Thr₁₄₅ Thr Ala Gln Gln₁₅₀ Ala₁₅₀ Ser Thr Asp Ile₁₅₅ Glu₁₅₅ Trp Asn Ile Ser₁₆₀ Gln₁₆₀
Pro Val Leu Val₁₆₅ Pro₁₆₅ Pro Arg Lys Gln₁₇₀ Val₁₇₀ Val Ala Thr Leu₁₇₅ Val₁₇₅ Ile
Met Gly Gly₁₈₀ Asn₁₈₀ Phe Thr Ile Pro₁₈₅ Met₁₈₅ Asp Leu Met Thr₁₉₀ Thr₁₉₀ Ile Asp
Ser Thr Glu₁₉₅ His Tyr Ser Gly₂₀₀ Tyr₂₀₀ Pro Ile Leu Thr₂₀₅ Trp₂₀₅ Ile Ser Ser
Pro Asp₂₁₀ Asn Ser Tyr Asn₂₁₅ Gly₂₁₅ Pro Phe Met Ser₂₂₀ Trp₂₂₀ Tyr Phe Ala Asn
Trp₂₂₅ Pro Asn Leu Pro₂₃₀ Ser₂₃₀ Gly Phe Gly Pro₂₃₅ Leu₂₃₅ Asn Ser Asp Asn Thr₂₄₀
Val Thr Tyr Thr₂₄₅ Gly₂₄₅ Ser Val Val Ser₂₅₀ Gln₂₅₀ Val Ser Ala Gly₂₅₅ Val₂₅₅ Tyr
Ala Thr Val₂₆₀ Arg₂₆₀ Phe Asp Gln Tyr₂₆₅ Asp₂₆₅ Ile His Asn Leu Arg₂₇₀ Thr Ile
Glu Lys Thr₂₇₅ Trp Tyr Ala Arg₂₈₀ His₂₈₀ Ala Thr Leu His₂₈₅ Asn₂₈₅ Gly Lys Lys

38_21_56191_APCT_SequenceListing_ST25.txt

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ala Lys
290 295 300

Thr Asn
305

<210> 63
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 63

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

38_21_56191_APCT_SequenceListing_ST25.txt

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Ala His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 64
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 64

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

38_21_56191_APCT_SequenceListing_ST25.txt

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Ala Asn
305

<210> 65
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 65

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

38_21_56191_APCT_SequenceListing_ST25.txt

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Ala Ala Pro Thr Ser Pro Ile Lys
 290 295 300

Thr Asn
 305

<210> 66
 <211> 306
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> engineered

<400> 66

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
 1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
 20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
 35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
 50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
 65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
 85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
 100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
 115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
 130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
 145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
 165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
 180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
 195 200 205

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Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu Ala Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 67
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 67

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ala Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

38_21_56191_APCT_SequenceListing_ST25.txt

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Ala Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 68
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 68

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

38_21_56191_APCT_SequenceListing_ST25.txt

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ala
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

38_21_56191_APCT_SequenceListing_ST25.txt

Thr Asn
305

<210> 69
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 69

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ala Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

38_21_56191_APCT_SequenceListing_ST25.txt

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Ala Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 70
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 70

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

38_21_56191_APCT_SequenceListing_ST25.txt

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Ala Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 71
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 71

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

38_21_56191_APCT_SequenceListing_ST25.txt

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ala Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

38_21_56191_APCT_SequenceListing_ST25.txt

Thr Asn
305

<210> 72
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 72

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ala Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

38_21_56191_APCT_SequenceListing_ST25.txt

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 73
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 73

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

38_21_56191_APCT_SequenceListing_ST25.txt

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Ala Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 74
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 74

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

38_21_56191_APCT_SequenceListing_ST25.txt

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
 50 55 60
 Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
 65 70 75 80
 Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
 85 90 95
 Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
 100 105 110
 Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
 115 120 125
 Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
 130 135 140
 Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
 145 150 155 160
 Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
 165 170 175
 Met Gly Gly Asn Phe Ala Ile Pro Met Asp Leu Met Thr Thr Ile Asp
 180 185 190
 Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
 195 200 205
 Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
 210 215 220
 Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
 225 230 235 240
 Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
 245 250 255
 Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
 260 265 270
 Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
 275 280 285
 Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
 290 295 300
 Thr Asn
 305

38_21_56191_APCT_SequenceListing_ST25.txt

<210> 75
 <211> 306
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> engineered

<400> 75

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
 1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
 20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
 35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
 50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
 65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
 85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
 100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
 115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
 130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
 145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
 165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
 180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
 195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
 210 215 220

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Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Ala Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 76
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 76

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

38_21_56191_APCT_SequenceListing_ST25.txt

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ala Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 77
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 77

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

38_21_56191_APCT_SequenceListing_ST25.txt

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Ala Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

38_21_56191_APCT_SequenceListing_ST25.txt

<210> 78
 <211> 306
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> engineered

<400> 78

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
 1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
 20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
 35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
 50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
 65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
 85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
 100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
 115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
 130 135 140

Thr Thr Phe Gln Gln Ala Ala Thr Asp Ile Glu Trp Asn Ile Ser Gln
 145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
 165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
 180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
 195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
 210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
 225 230 235 240

38_21_56191_APCT_SequenceListing_ST25.txt

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 79
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 79

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Ala Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

38_21_56191_APCT_SequenceListing_ST25.txt

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 80
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 80

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

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Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65      70      75      80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ala Thr
      85      90      95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
      100     105     110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
      115     120     125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
      130     135     140

Thr Thr Phe Ala Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145      150     155     160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
      165     170     175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
      180     185     190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
      195     200     205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
      210     215     220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225      230     235     240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
      245     250     255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
      260     265     270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
      275     280     285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
      290     295     300

Thr Asn
305

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<210> 81
<211> 306

38_21_56191_APCT_SequenceListing_ST25.txt

<212> PRT
 <213> Artificial Sequence
 <220>
 <223> engineered
 <400> 81

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
 1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
 20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
 35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
 50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
 65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
 85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
 100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
 115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
 130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
 145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
 165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
 180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
 195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
 210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
 225 230 235 240

38_21_56191_APCT_SequenceListing_ST25.txt

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Ala Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 82
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 82

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

38_21_56191_APCT_SequenceListing_ST25.txt

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 83
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 83

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

38_21_56191_APCT_SequenceListing_ST25.txt

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Ala Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 84
<211> 306
<212> PRT
<213> Artificial sequence

38_21_56191_APCT_SequenceListing_ST25.txt

<220>

<223> engineered

<400> 84

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ala Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Ala Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

38_21_56191_APCT_SequenceListing_ST25.txt

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 85
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 85

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Ala Trp Asn Ile Ser Gln
145 150 155 160

38_21_56191_APCT_SequenceListing_ST25.txt

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 86
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 86

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

38_21_56191_APCT_SequenceListing_ST25.txt

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ala Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 87
<211> 306
<212> PRT
<213> Artificial Sequence

<220>

<223> engineered

<400> 87

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Ala Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

38_21_56191_APCT_SequenceListing_ST25.txt

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 88
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 88

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

38_21_56191_APCT_SequenceListing_ST25.txt

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ala Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 89
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 89

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

38_21_56191_APCT_SequenceListing_ST25.txt

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Ala Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 90
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

38_21_56191_APCT_SequenceListing_ST25.txt

<400> 90

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
 1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
 20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
 35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
 50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
 65 70 75 80

Ser Gln Thr Val Ser Phe Ser Lys Lys Thr Thr Thr Thr Thr Ser Thr
 85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
 100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
 115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
 130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
 145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
 165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
 180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
 195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
 210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
 225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
 245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
 260 265 270

38_21_56191_APCT_SequenceListing_ST25.txt

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 91
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 91

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

38_21_56191_APCT_SequenceListing_ST25.txt

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ala Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 92
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 92

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ala Thr
85 90 95

38_21_56191_APCT_SequenceListing_ST25.txt

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ala
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 93
<211> 306
<212> PRT
<213> Artificial sequence

<220>
<223> engineered

<400> 93

38_21_56191_APCT_SequenceListing_ST25.txt

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ser His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

38_21_56191_APCT_SequenceListing_ST25.txt

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 94
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 94

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

38_21_56191_APCT_SequenceListing_ST25.txt

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Ala Ile Lys
290 295 300

Thr Asn
305

<210> 95
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 95

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

38_21_56191_APCT_SequenceListing_ST25.txt

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ala Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 96
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 96

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

38_21_56191_APCT_SequenceListing_ST25.txt

Trp Gly Pro Lys₂₀ Asn Asn Asn Gly₂₅ Ile₂₅ Gln Gly Gly Asp₃₀ Phe Gly Tyr
Pro Ile Ser₃₅ Glu Lys Gln Ile₄₀ Asp₄₀ Thr Ser Ile Ile₄₅ Thr₄₅ Ser Thr His
Pro Arg₅₀ Leu Ile Pro His₅₅ Asp₅₅ Leu Thr Ile Pro₆₀ Gln₆₀ Asn Leu Glu Thr
Ile₆₅ Phe Thr Thr Thr₇₀ Gln₇₀ Val Leu Thr Asn₇₅ Asn₇₅ Thr Asp Leu Gln₈₀ Gln₈₀
Ser Gln Thr Val₈₅ Ser₈₅ Phe Ala Lys Lys₉₀ Thr₉₀ Thr Thr Thr Thr₉₅ Ser₉₅ Thr
Ser Thr Thr₁₀₀ Asn₁₀₀ Gly Trp Thr Glu Gly₁₀₅ Gly₁₀₅ Lys Ile Ser Asp₁₁₀ Thr Leu
Glu Glu Lys₁₁₅ Val Ser Val Ser₁₂₀ Ile₁₂₀ Pro Phe Ile Gly₁₂₅ Glu₁₂₅ Gly Gly Gly
Lys₁₃₀ Asn₁₃₀ Ser Thr Thr Ile₁₃₅ Glu₁₃₅ Ala Asn Phe Ala₁₄₀ His₁₄₀ Asn Ser Ser Thr
Thr₁₄₅ Thr Ala Gln Gln₁₅₀ Ala₁₅₀ Ser Thr Asp Ile₁₅₅ Glu₁₅₅ Trp Asn Ile Ser₁₆₀ Gln₁₆₀
Pro Val Leu Val₁₆₅ Pro₁₆₅ Pro Arg Lys Gln₁₇₀ Val₁₇₀ Val Ala Thr Leu₁₇₅ Val₁₇₅ Ile
Met Gly Gly₁₈₀ Asn₁₈₀ Phe Thr Ile Pro₁₈₅ Met₁₈₅ Asp Leu Met Thr₁₉₀ Thr₁₉₀ Ile Asp
Ser Thr Glu₁₉₅ His Tyr Ser Gly₂₀₀ Tyr₂₀₀ Pro Ile Leu Thr₂₀₅ Trp₂₀₅ Ile Ser Ser
Pro Asp₂₁₀ Asn Ser Tyr Asn₂₁₅ Gly₂₁₅ Pro Phe Met Ser₂₂₀ Trp₂₂₀ Tyr Phe Ala Asn
Trp₂₂₅ Pro Asn Leu Pro₂₃₀ Ser₂₃₀ Gly Phe Gly Pro₂₃₅ Leu₂₃₅ Asn Ser Asp Asn Thr₂₄₀
Val Thr Tyr Thr₂₄₅ Gly₂₄₅ Ser Val Val Ala₂₅₀ Gln₂₅₀ Val Ser Ala Gly₂₅₅ Val₂₅₅ Tyr
Ala Thr Val₂₆₀ Arg₂₆₀ Phe Asp Gln Tyr₂₆₅ Asp₂₆₅ Ile His Asn Leu Arg₂₇₀ Thr₂₇₀ Ile
Glu Lys Thr₂₇₅ Trp Tyr Ala Arg₂₈₀ His₂₈₀ Ala Thr Leu His₂₈₅ Asn₂₈₅ Gly Lys Lys

38_21_56191_APCT_SequenceListing_ST25.txt

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 97
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 97

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

38_21_56191_APCT_SequenceListing_ST25.txt

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 98
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 98

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

38_21_56191_APCT_SequenceListing_ST25.txt

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Ala Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 99
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 99

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

38_21_56191_APCT_SequenceListing_ST25.txt

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Ala
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

38_21_56191_APCT_SequenceListing_ST25.txt

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 100
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 100

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Ala Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

38_21_56191_APCT_SequenceListing_ST25.txt

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 101
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 101

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ala Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

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Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Ala Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 102
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 102

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

38_21_56191_APCT_SequenceListing_ST25.txt

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

38_21_56191_APCT_SequenceListing_ST25.txt

Thr Asn
305

<210> 103
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 103

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

38_21_56191_APCT_SequenceListing_ST25.txt

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Ala Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 104
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 104

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ala Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

38_21_56191_APCT_SequenceListing_ST25.txt

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Ala His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 105
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 105

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

38_21_56191_APCT_SequenceListing_ST25.txt

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ala Lys
290 295 300

38_21_56191_APCT_SequenceListing_ST25.txt

Thr Asn
305

<210> 106
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 106

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ala Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

38_21_56191_APCT_SequenceListing_ST25.txt

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ala Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 107
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 107

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ser Lys Lys Thr Thr Thr Ala Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

38_21_56191_APCT_SequenceListing_ST25.txt

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 108
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 108

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

38_21_56191_APCT_SequenceListing_ST25.txt

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
 50 55 60
 Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
 65 70 75 80
 Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
 85 90 95
 Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
 100 105 110
 Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
 115 120 125
 Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
 130 135 140
 Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ala Gln
 145 150 155 160
 Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
 165 170 175
 Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
 180 185 190
 Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
 195 200 205
 Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
 210 215 220
 Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
 225 230 235 240
 Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
 245 250 255
 Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
 260 265 270
 Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
 275 280 285
 Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
 290 295 300
 Thr Asn
 305

38_21_56191_APCT_SequenceListing_ST25.txt

<210> 109
 <211> 306
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> engineered

<400> 109

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
 1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
 20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
 35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
 50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
 65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
 85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
 100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
 115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
 130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
 145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
 165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
 180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
 195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
 210 215 220

38_21_56191_APCT_SequenceListing_ST25.txt

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Ala Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 110
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 110

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

38_21_56191_APCT_SequenceListing_ST25.txt

Thr Thr Phe Ala Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 111
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 111

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

38_21_56191_APCT_SequenceListing_ST25.txt

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ala Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Ala Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

38_21_56191_APCT_SequenceListing_ST25.txt

<210> 112
 <211> 306
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> engineered

<400> 112

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
 1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
 20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
 35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
 50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
 65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
 85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
 100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
 115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
 130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
 145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
 165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
 180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
 195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
 210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Ala Asn Thr
 225 230 235 240

38_21_56191_APCT_SequenceListing_ST25.txt

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 113
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 113

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ala Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

38_21_56191_APCT_SequenceListing_ST25.txt

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 114
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 114

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

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Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65      70      75      80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
      85      90      95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
      100      105      110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
      115      120      125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
      130      135      140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145      150      155      160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
      165      170      175

Ala Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
      180      185      190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
      195      200      205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
      210      215      220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225      230      235      240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
      245      250      255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
      260      265      270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
      275      280      285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
      290      295      300

Thr Asn
305

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<210> 115
<211> 306

38_21_56191_APCT_SequenceListing_ST25.txt

<212> PRT
 <213> Artificial Sequence
 <220>
 <223> engineered
 <400> 115
 Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
 1 5 10 15
 Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
 20 25 30
 Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
 35 40 45
 Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
 50 55 60
 Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
 65 70 75 80
 Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
 85 90 95
 Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
 100 105 110
 Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
 115 120 125
 Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
 130 135 140
 Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
 145 150 155 160
 Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
 165 170 175
 Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
 180 185 190
 Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
 195 200 205
 Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
 210 215 220
 Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
 225 230 235 240

38_21_56191_APCT_SequenceListing_ST25.txt

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Ala Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 116
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 116

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ala Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

38_21_56191_APCT_SequenceListing_ST25.txt

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Ala Ile Lys
290 295 300

Thr Asn
305

<210> 117
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 117

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

38_21_56191_APCT_SequenceListing_ST25.txt

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu Ala Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 118
<211> 306
<212> PRT
<213> Artificial sequence

38_21_56191_APCT_SequenceListing_ST25.txt

<220>

<223> engineered

<400> 118

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ser His Asn Ser Ser Thr
130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

38_21_56191_APCT_SequenceListing_ST25.txt

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 119
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 119

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

38_21_56191_APCT_SequenceListing_ST25.txt

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Ala Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 120
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 120

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

38_21_56191_APCT_SequenceListing_ST25.txt

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Ala Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 121
<211> 306
<212> PRT
<213> Artificial Sequence

<220>

<223> engineered

<400> 121

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ala Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

38_21_56191_APCT_SequenceListing_ST25.txt

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 122
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 122

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

38_21_56191_APCT_SequenceListing_ST25.txt

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ala
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

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

<220>
<223> engineered

<400> 123

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

38_21_56191_APCT_SequenceListing_ST25.txt

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ala Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu Ala Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 124
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 124

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
 1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
 20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
 35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
 50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
 65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ala Thr
 85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Ala Gly Lys Ile Ser Asp Thr Leu
 100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
 115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
 130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
 145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
 165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
 180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
 195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
 210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
 225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
 245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
 260 265 270

38_21_56191_APCT_SequenceListing_ST25.txt

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 125
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 125

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ala Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

38_21_56191_APCT_SequenceListing_ST25.txt

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 126
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 126

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ala Thr
85 90 95

38_21_56191_APCT_SequenceListing_ST25.txt

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ala Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 127
<211> 306
<212> PRT
<213> Artificial sequence

<220>
<223> engineered

<400> 127

38_21_56191_APCT_SequenceListing_ST25.txt

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

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Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Ala Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 128
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 128

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

38_21_56191_APCT_SequenceListing_ST25.txt

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Ala Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 129
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 129

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
85 90 95

38_21_56191_APCT_SequenceListing_ST25.txt

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ser Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 130
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 130

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

38_21_56191_APCT_SequenceListing_ST25.txt

Trp Gly Pro Lys₂₀ Asn Asn Asn Gly₂₅ Ile₂₅ Gln Gly Gly Asp₃₀ Phe Gly Tyr
Pro Ile Ser₃₅ Glu Lys Gln Ile₄₀ Asp₄₀ Thr Ser Ile Ile₄₅ Thr₄₅ Ser Thr His
Pro Arg₅₀ Leu Ile Pro His₅₅ Asp₅₅ Leu Thr Ile Pro₆₀ Gln₆₀ Asn Leu Glu Thr
Ile₆₅ Phe Thr Thr Thr₇₀ Gln₇₀ Val Leu Thr Asn₇₅ Asn₇₅ Thr Asp₈₀ Leu₈₀ Gln₈₀ Gln₈₀
Ser Gln Thr Val₈₅ Ser₈₅ Phe Ala Lys Lys₉₀ Thr₉₀ Thr Thr Thr Thr₉₅ Ala₉₅ Thr
Ser Thr Thr Asn₁₀₀ Gly Trp Thr Glu₁₀₅ Gly₁₀₅ Gly Lys Ile Ser₁₁₀ Asp₁₁₀ Thr Leu
Glu Glu Lys₁₁₅ Val Ser Val Ser₁₂₀ Ile₁₂₀ Pro Phe Ile Gly₁₂₅ Glu₁₂₅ Gly Gly Gly
Lys₁₃₀ Asn₁₃₀ Ser Thr Thr Ile₁₃₅ Glu₁₃₅ Ala Asn Phe Ala₁₄₀ His₁₄₀ Asn Ser Ser Thr
Thr₁₄₅ Thr Phe Gln Gln₁₅₀ Ala₁₅₀ Ser Thr Asp Ile₁₅₅ Ala₁₅₅ Trp Asn Ile Ser₁₆₀ Gln₁₆₀
Pro Val Leu Val₁₆₅ Pro₁₆₅ Pro Arg Lys Gln₁₇₀ Val₁₇₀ Val Ala Thr Leu₁₇₅ Val₁₇₅ Ile
Met Gly Gly Asn₁₈₀ Phe Thr Ile Pro₁₈₅ Met₁₈₅ Asp Leu Met Thr₁₉₀ Thr₁₉₀ Ile Asp
Ser Thr Glu₁₉₅ His Tyr Ser Gly₂₀₀ Tyr₂₀₀ Pro Ile Leu Thr₂₀₅ Trp₂₀₅ Ile Ser Ser
Pro Asp₂₁₀ Asn Ser Tyr Asn₂₁₅ Gly₂₁₅ Pro Phe Met Ser₂₂₀ Trp₂₂₀ Tyr Phe Ala Asn
Trp₂₂₅ Pro Asn Leu Pro₂₃₀ Ser₂₃₀ Gly Phe Gly Pro₂₃₅ Leu₂₃₅ Asn Ser Asp Asn Thr₂₄₀
Val Thr Tyr Thr₂₄₅ Gly₂₄₅ Ser Val Val Ser₂₅₀ Gln₂₅₀ Val Ser Ala Gly₂₅₅ Val₂₅₅ Tyr
Ala Thr Val₂₆₀ Arg₂₆₀ Phe Asp Gln Tyr₂₆₅ Asp₂₆₅ Ile His Asn Leu₂₇₀ Arg₂₇₀ Thr Ile
Glu Lys Thr₂₇₅ Trp Tyr Ala Arg₂₈₀ His₂₈₀ Ala Thr Leu His₂₈₅ Asn₂₈₅ Gly Lys Lys

38_21_56191_APCT_SequenceListing_ST25.txt

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 131
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 131

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Ala Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

38_21_56191_APCT_SequenceListing_ST25.txt

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 132
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 132

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ala Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

38_21_56191_APCT_SequenceListing_ST25.txt

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Ala Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 133
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 133

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

38_21_56191_APCT_SequenceListing_ST25.txt

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ala Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Ala Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

38_21_56191_APCT_SequenceListing_ST25.txt

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 134
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 134

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

38_21_56191_APCT_SequenceListing_ST25.txt

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Ala
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 135
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 135

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ala Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

38_21_56191_APCT_SequenceListing_ST25.txt

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ala Lys
290 295 300

Thr Asn
305

<210> 136
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 136

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

38_21_56191_APCT_SequenceListing_ST25.txt

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ala Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ala Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

38_21_56191_APCT_SequenceListing_ST25.txt

Thr Asn
305

<210> 137
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 137

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ala Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

38_21_56191_APCT_SequenceListing_ST25.txt

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 138
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 138

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Ala Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

38_21_56191_APCT_SequenceListing_ST25.txt

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 139
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 139

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

38_21_56191_APCT_SequenceListing_ST25.txt

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Ala Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

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Thr Asn
305

<210> 140
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 140

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ala Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Ala Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

38_21_56191_APCT_SequenceListing_ST25.txt

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 141
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 141

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

38_21_56191_APCT_SequenceListing_ST25.txt

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Ala Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 142
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 142

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

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Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
 50 55 60
 Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
 65 70 75 80
 Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
 85 90 95
 Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
 100 105 110
 Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
 115 120 125
 Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
 130 135 140
 Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
 145 150 155 160
 Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
 165 170 175
 Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
 180 185 190
 Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
 195 200 205
 Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
 210 215 220
 Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
 225 230 235 240
 Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
 245 250 255
 Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
 260 265 270
 Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
 275 280 285
 Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Ala Ile Lys
 290 295 300
 Thr Asn
 305

38_21_56191_APCT_SequenceListing_ST25.txt

<210> 143
 <211> 306
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> engineered

<400> 143

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
 1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
 20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
 35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
 50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
 65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ala Thr
 85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
 100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
 115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
 130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
 145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
 165 170 175

Ala Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
 180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
 195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
 210 215 220

38_21_56191_APCT_SequenceListing_ST25.txt

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 144
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 144

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

38_21_56191_APCT_SequenceListing_ST25.txt

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu Ala Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 145
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 145

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

38_21_56191_APCT_SequenceListing_ST25.txt

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Ala Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

38_21_56191_APCT_SequenceListing_ST25.txt

<210> 146
 <211> 306
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> engineered

<400> 146

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
 1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
 20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
 35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
 50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
 65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
 85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
 100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
 115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
 130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
 145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
 165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
 180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Ala Ile Ser Ser
 195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
 210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
 225 230 235 240

38_21_56191_APCT_SequenceListing_ST25.txt

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 147
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 147

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

38_21_56191_APCT_SequenceListing_ST25.txt

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ala Lys
290 295 300

Thr Asn
305

<210> 148
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 148

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

38_21_56191_APCT_SequenceListing_ST25.txt

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ala Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu Ala Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 149
<211> 306

38_21_56191_APCT_SequenceListing_ST25.txt

<212> PRT
 <213> Artificial Sequence
 <220>
 <223> engineered
 <400> 149
 Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
 1 5 10 15
 Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
 20 25 30
 Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
 35 40 45
 Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
 50 55 60
 Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
 65 70 75 80
 Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ala Thr
 85 90 95
 Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
 100 105 110
 Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
 115 120 125
 Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
 130 135 140
 Thr Thr Phe Gln Ala Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
 145 150 155 160
 Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
 165 170 175
 Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
 180 185 190
 Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
 195 200 205
 Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
 210 215 220
 Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
 225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
 245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
 260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
 275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
 290 295 300

Thr Asn
 305

<210> 150
 <211> 306
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> engineered

<400> 150

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
 1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
 20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
 35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
 50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
 65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ala Thr
 85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
 100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
 115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
 130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
 145 150 155 160

38_21_56191_APCT_SequenceListing_ST25.txt

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ala Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 151
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 151

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

38_21_56191_APCT_SequenceListing_ST25.txt

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ala Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ser Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 152
<211> 306
<212> PRT
<213> Artificial sequence

38_21_56191_APCT_SequenceListing_ST25.txt

<220>

<223> engineered

<400> 152

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ala Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

38_21_56191_APCT_SequenceListing_ST25.txt

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 153
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 153

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ala Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

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Pro Val Leu Val Pro Ala Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 154
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 154

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

38_21_56191_APCT_SequenceListing_ST25.txt

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ala Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 155
<211> 306
<212> PRT
<213> Artificial Sequence

<220>

<223> engineered

<400> 155

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
 1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
 20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
 35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
 50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
 65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ala Thr
 85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
 100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
 115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
 130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
 145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
 165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
 180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
 195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
 210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
 225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
 245 250 255

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Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Ala Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 156
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 156

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

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Met Gly Gly Asn Phe Ala Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 157
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 157

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

38_21_56191_APCT_SequenceListing_ST25.txt

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Ala Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 158
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 158

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Ala Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Ala Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

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Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 159
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 159

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

38_21_56191_APCT_SequenceListing_ST25.txt

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Ala Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 160
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 160

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ala Thr
85 90 95

38_21_56191_APCT_SequenceListing_ST25.txt

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Ala Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 161
<211> 306
<212> PRT
<213> Artificial sequence

<220>
<223> engineered

<400> 161

38_21_56191_APCT_SequenceListing_ST25.txt

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Ala Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

38_21_56191_APCT_SequenceListing_ST25.txt

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 162
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 162

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ala Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

38_21_56191_APCT_SequenceListing_ST25.txt

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Ala Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 163
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 163

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ala Thr
85 90 95

38_21_56191_APCT_SequenceListing_ST25.txt

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Ala Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 164
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 164

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

38_21_56191_APCT_SequenceListing_ST25.txt

Trp Gly Pro Lys₂₀ Asn Asn Asn Gly₂₅ Ile₂₅ Gln Gly Gly Asp₃₀ Phe Gly Tyr
 Pro Ile Ser₃₅ Glu Lys Gln Ile₄₀ Asp₄₀ Thr Ser Ile Ile₄₅ Thr₄₅ Ser Thr His
 Pro Arg₅₀ Leu Ile Pro His₅₅ Asp₅₅ Leu Thr Ile Pro₆₀ Gln₆₀ Asn Leu Glu Thr
 Ile₆₅ Phe Thr Thr Thr₇₀ Gln₇₀ Val Leu Thr Asn₇₅ Asn₇₅ Thr Asp Leu Gln₈₀ Gln₈₀
 Ser Gln Thr Val₈₅ Ser₈₅ Phe Ala Lys Lys₉₀ Thr₉₀ Thr Thr Ala Thr₉₅ Ser₉₅ Thr
 Ser Thr Thr₁₀₀ Asn₁₀₀ Gly Trp Thr Glu₁₀₅ Gly₁₀₅ Gly Lys Ile Ser₁₁₀ Asp₁₁₀ Thr Leu
 Glu Glu Lys₁₁₅ Val Ser Val Ser₁₂₀ Ile₁₂₀ Pro Phe Ile Gly₁₂₅ Glu₁₂₅ Gly Gly Gly
 Lys₁₃₀ Asn₁₃₀ Ser Thr Thr Ile₁₃₅ Glu₁₃₅ Ala Asn Phe Ala₁₄₀ His₁₄₀ Asn Ser Ser Thr
 Thr₁₄₅ Thr Phe Gln Gln₁₅₀ Ala₁₅₀ Ser Thr Asp Ile₁₅₅ Glu₁₅₅ Trp Asn Ile Ser₁₆₀ Gln₁₆₀
 Pro Val Leu Val₁₆₅ Pro₁₆₅ Pro Arg Lys Gln₁₇₀ Val₁₇₀ Val Ala Thr Leu₁₇₅ Val₁₇₅ Ile
 Met Gly Gly₁₈₀ Asn₁₈₀ Phe Thr Ile Pro₁₈₅ Met₁₈₅ Asp Ala Met Thr₁₉₀ Thr₁₉₀ Ile Asp
 Ser Thr Glu₁₉₅ His Tyr Ser Gly₂₀₀ Tyr₂₀₀ Pro Ile Leu Thr₂₀₅ Trp₂₀₅ Ile Ser Ser
 Pro Asp₂₁₀ Asn Ser Tyr Asn₂₁₅ Gly₂₁₅ Pro Phe Met Ser₂₂₀ Trp₂₂₀ Tyr Phe Ala Asn
 Trp₂₂₅ Pro Asn Leu Pro₂₃₀ Ser₂₃₀ Gly Phe Gly Pro₂₃₅ Leu₂₃₅ Asn Ser Asp Asn Thr₂₄₀
 Val Thr Tyr Thr₂₄₅ Gly₂₄₅ Ser Val Val Ser₂₅₀ Gln₂₅₀ Val Ser Ala Gly₂₅₅ Val₂₅₅ Tyr
 Ala Thr Val₂₆₀ Arg₂₆₀ Phe Asp Gln Tyr₂₆₅ Asp₂₆₅ Ile His Asn Leu Arg₂₇₀ Thr₂₇₀ Ile
 Glu Lys Thr₂₇₅ Trp Tyr Ala Arg₂₈₀ His₂₈₀ Ala Thr Leu His₂₈₅ Asn₂₈₅ Gly Lys Lys

38_21_56191_APCT_SequenceListing_ST25.txt

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 165
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 165

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

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Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Ala Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 166
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 166

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

38_21_56191_APCT_SequenceListing_ST25.txt

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Ala Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 167
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 167

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

38_21_56191_APCT_SequenceListing_ST25.txt

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Ala Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

38_21_56191_APCT_SequenceListing_ST25.txt

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 168
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<400> 168

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ala Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

38_21_56191_APCT_SequenceListing_ST25.txt

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 169
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<220>
<221> VARIANT
<222> (133)..(133)
<223> is not T

<220>
<221> VARIANT
<222> (135)..(135)
<223> is not E

<220>
<221> VARIANT
<222> (137)..(137)
<223> is not N

<400> 169

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

38_21_56191_APCT_SequenceListing_ST25.txt

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Ala Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Xaa Ile Xaa Ala Xaa Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
195 200 205

Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr Phe Ala Asn
210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
225 230 235 240

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

38_21_56191_APCT_SequenceListing_ST25.txt

<210> 170
 <211> 309
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> engineered

<220>
 <221> VARIANT
 <222> (125)..(125)
 <223> is not E

<400> 170

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
 1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
 20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Phe Thr His
 35 40 45

Pro Arg Leu Ile Pro Tyr Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
 50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
 65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
 85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
 100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Xaa Gly Gly Gly
 115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
 130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
 145 150 155 160

Pro Val Leu Val Pro Pro Ser Lys Gln Val Val Ala Thr Leu Val Ile
 165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
 180 185 190

Ser Thr Glu His Tyr Ser His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp
 195 200 205

38_21_56191_APCT_SequenceListing_ST25.txt

Ile Ser Ser Pro Asp Asn Ser Tyr Ser Gly Pro Phe Met Ser Trp Tyr
210 215 220

Phe Ala Asn Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser
225 230 235 240

Asp Asn Thr Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala
245 250 255

Gly Val Tyr Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu
260 265 270

Arg Thr Ile Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn
275 280 285

Gly Lys Lys Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser
290 295 300

Pro Ile Lys Thr Asn
305

<210> 171
<211> 309
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<220>
<221> VARIANT
<222> (133)..(133)
<223> is not T

<400> 171

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Phe Thr His
35 40 45

Pro Arg Leu Ile Pro Tyr Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

38_21_56191_APCT_SequenceListing_ST25.txt

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Xaa Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Ser Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp
195 200 205

Ile Ser Ser Pro Asp Asn Ser Tyr Ser Gly Pro Phe Met Ser Trp Tyr
210 215 220

Phe Ala Asn Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser
225 230 235 240

Asp Asn Thr Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala
245 250 255

Gly Val Tyr Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu
260 265 270

Arg Thr Ile Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn
275 280 285

Gly Lys Lys Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser
290 295 300

Pro Ile Lys Thr Asn
305

<210> 172
<211> 309
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<220>
<221> VARIANT
<222> (134)..(134)

<223> is not I

<400> 172

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Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1      5      10      15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
      20      25      30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Phe Thr His
      35      40      45

Pro Arg Leu Ile Pro Tyr Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
      50      55      60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65      70      75      80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
      85      90      95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
      100      105      110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
      115      120      125

Lys Asn Ser Thr Thr Xaa Glu Ala Asn Phe Ala His Asn Ser Ser Thr
      130      135      140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145      150      155      160

Pro Val Leu Val Pro Pro Ser Lys Gln Val Val Ala Thr Leu Val Ile
      165      170      175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
      180      185      190

Ser Thr Glu His Tyr Ser His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp
      195      200      205

Ile Ser Ser Pro Asp Asn Ser Tyr Ser Gly Pro Phe Met Ser Trp Tyr
      210      215      220

Phe Ala Asn Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser
225      230      235      240

Asp Asn Thr Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala
      245      250      255

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Gly Val Tyr Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu
260 265 270

Arg Thr Ile Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn
275 280 285

Gly Lys Lys Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser
290 295 300

Pro Ile Lys Thr Asn
305

<210> 173
<211> 309
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<220>
<221> VARIANT
<222> (135)..(135)
<223> is not E

<400> 173

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Phe Thr His
35 40 45

Pro Arg Leu Ile Pro Tyr Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Xaa Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

38_21_56191_APCT_SequenceListing_ST25.txt

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Ser Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp
195 200 205

Ile Ser Ser Pro Asp Asn Ser Tyr Ser Gly Pro Phe Met Ser Trp Tyr
210 215 220

Phe Ala Asn Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser
225 230 235 240

Asp Asn Thr Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala
245 250 255

Gly Val Tyr Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu
260 265 270

Arg Thr Ile Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn
275 280 285

Gly Lys Lys Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser
290 295 300

Pro Ile Lys Thr Asn
305

<210> 174
<211> 309
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<220>
<221> VARIANT
<222> (137)..(137)
<223> is not N

<400> 174

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

38_21_56191_APCT_SequenceListing_ST25.txt

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Phe Thr His
35 40 45

Pro Arg Leu Ile Pro Tyr Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Xaa Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Ser Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp
195 200 205

Ile Ser Ser Pro Asp Asn Ser Tyr Ser Gly Pro Phe Met Ser Trp Tyr
210 215 220

Phe Ala Asn Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser
225 230 235 240

Asp Asn Thr Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala
245 250 255

Gly Val Tyr Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu
260 265 270

Arg Thr Ile Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn
275 280 285

Gly Lys Lys Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser
290 295 300

Pro Ile Lys Thr Asn
305

<210> 175
<211> 309
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<220>
<221> VARIANT
<222> (147)..(147)
<223> is not F

<400> 175

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Phe Thr His
35 40 45

Pro Arg Leu Ile Pro Tyr Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Xaa Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Ser Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

38_21_56191_APCT_SequenceListing_ST25.txt

Ser Thr Glu His Tyr Ser His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp
195 200 205

Ile Ser Ser Pro Asp Asn Ser Tyr Ser Gly Pro Phe Met Ser Trp Tyr
210 215 220

Phe Ala Asn Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser
225 230 235 240

Asp Asn Thr Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala
245 250 255

Gly Val Tyr Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu
260 265 270

Arg Thr Ile Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn
275 280 285

Gly Lys Lys Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser
290 295 300

Pro Ile Lys Thr Asn
305

<210> 176
<211> 309
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<220>
<221> VARIANT
<222> (149)..(149)
<223> is not Q

<400> 176

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Phe Thr His
35 40 45

Pro Arg Leu Ile Pro Tyr Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

38_21_56191_APCT_SequenceListing_ST25.txt

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Xaa Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Ser Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp
195 200 205

Ile Ser Ser Pro Asp Asn Ser Tyr Ser Gly Pro Phe Met Ser Trp Tyr
210 215 220

Phe Ala Asn Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser
225 230 235 240

Asp Asn Thr Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala
245 250 255

Gly Val Tyr Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu
260 265 270

Arg Thr Ile Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn
275 280 285

Gly Lys Lys Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser
290 295 300

Pro Ile Lys Thr Asn
305

<210> 177
<211> 309
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

38_21_56191_APCT_SequenceListing_ST25.txt

<220>

<221> VARIANT

<222> (150)..(150)

<223> is not A

<400> 177

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Phe Thr His
35 40 45

Pro Arg Leu Ile Pro Tyr Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Xaa Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Ser Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp
195 200 205

Ile Ser Ser Pro Asp Asn Ser Tyr Ser Gly Pro Phe Met Ser Trp Tyr
210 215 220

Phe Ala Asn Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser
225 230 235 240

38_21_56191_APCT_SequenceListing_ST25.txt

Asp Asn Thr Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala
245 250 255

Gly Val Tyr Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu
260 265 270

Arg Thr Ile Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn
275 280 285

Gly Lys Lys Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser
290 295 300

Pro Ile Lys Thr Asn
305

<210> 178
<211> 309
<212> PRT
<213> Artificial Sequence

<220>
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<220>
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<223> is not E

<400> 178

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Phe Thr His
35 40 45

Pro Arg Leu Ile Pro Tyr Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

38_21_56191_APCT_SequenceListing_ST25.txt

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Xaa Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Ser Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp
195 200 205

Ile Ser Ser Pro Asp Asn Ser Tyr Ser Gly Pro Phe Met Ser Trp Tyr
210 215 220

Phe Ala Asn Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser
225 230 235 240

Asp Asn Thr Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala
245 250 255

Gly Val Tyr Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu
260 265 270

Arg Thr Ile Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn
275 280 285

Gly Lys Lys Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser
290 295 300

Pro Ile Lys Thr Asn
305

<210> 179
<211> 309
<212> PRT
<213> Artificial Sequence

<220>
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<220>
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<222> (157)..(157)
<223> is not N

<400> 179

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
1 5 10 15

38_21_56191_APCT_SequenceListing_ST25.txt

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Phe Thr His
35 40 45

Pro Arg Leu Ile Pro Tyr Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Xaa Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Ser Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp
195 200 205

Ile Ser Ser Pro Asp Asn Ser Tyr Ser Gly Pro Phe Met Ser Trp Tyr
210 215 220

Phe Ala Asn Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser
225 230 235 240

Asp Asn Thr Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala
245 250 255

Gly Val Tyr Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu
260 265 270

Arg Thr Ile Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn
275 280 285

Gly Lys Lys Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser
 290 295 300

Pro Ile Lys Thr Asn
 305

<210> 180
 <211> 309
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> engineered

<220>
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 <223> is not TIC807 (SEQ ID NO: 2)

<220>
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 <222> (12)..(12)
 <223> Xaa can be any naturally occurring amino acid

<220>
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 <222> (46)..(46)
 <223> Xaa can be any naturally occurring amino acid

<220>
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 <223> Xaa can be any naturally occurring amino acid

<220>
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 <223> Xaa can be any naturally occurring amino acid

<220>
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 <223> Xaa can be any naturally occurring amino acid

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 <223> Xaa can be any naturally occurring amino acid

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 <223> Xaa can be any naturally occurring amino acid

<220>
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<223> Xaa can be any naturally occurring amino acid

<220>
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<222> (117)..(117)
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<223> Xaa can be any naturally occurring amino acid

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<223> Xaa can be any naturally occurring amino acid

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<223> Xaa can be any naturally occurring amino acid

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<223> Xaa can be any naturally occurring amino acid

<220>
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<222> (137)..(139)
<223> Xaa can be any naturally occurring amino acid

<220>
<221> misc_feature
<222> (145)..(145)
<223> Xaa can be any naturally occurring amino acid

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<222> (147)..(151)
<223> Xaa can be any naturally occurring amino acid

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<223> Xaa can be any naturally occurring amino acid

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<223> Xaa can be any naturally occurring amino acid

<220>
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<222> (157)..(159)
<223> Xaa can be any naturally occurring amino acid

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<222> (167)..(167)
<223> Xaa can be any naturally occurring amino acid

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<222> (175)..(175)
<223> Xaa can be any naturally occurring amino acid

<220>
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<222> (177)..(177)
<223> Xaa can be any naturally occurring amino acid

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<223> Xaa can be any naturally occurring amino acid

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<223> Xaa can be any naturally occurring amino acid

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<223> Xaa can be any naturally occurring amino acid

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<223> Xaa can be any naturally occurring amino acid

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<222> (208)..(208)
<223> Xaa can be any naturally occurring amino acid

<220>
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<222> (217)..(217)
<223> Xaa can be any naturally occurring amino acid

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<222> (219)..(219)
<223> Xaa can be any naturally occurring amino acid

<220>
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<222> (223)..(223)
<223> Xaa can be any naturally occurring amino acid

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<222> (235)..(235)
<223> Xaa can be any naturally occurring amino acid

<220>
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<222> (239)..(239)
<223> Xaa can be any naturally occurring amino acid

<220>
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<222> (241)..(241)
<223> Xaa can be any naturally occurring amino acid

<220>
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<222> (243)..(247)
<223> Xaa can be any naturally occurring amino acid

<220>
<221> misc_feature
<222> (249)..(252)

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<223> Xaa can be any naturally occurring amino acid

<220>
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<222> (273)..(275)
<223> Xaa can be any naturally occurring amino acid

<220>
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<223> Xaa can be any naturally occurring amino acid

<220>
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<222> (287)..(287)
<223> Xaa can be any naturally occurring amino acid

<220>
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<222> (293)..(293)
<223> Xaa can be any naturally occurring amino acid

<220>
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<223> Xaa can be any naturally occurring amino acid

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<223> Xaa can be any naturally occurring amino acid

<220>
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<222> (305)..(306)
<223> Xaa can be any naturally occurring amino acid

<220>
<221> misc_feature
<222> (308)..(308)
<223> Xaa can be any naturally occurring amino acid

<400> 180

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Xaa Ala Ile Asn Tyr
1          5          10          15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
          20          25          30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Xaa Thr His
          35          40          45

Pro Arg Leu Xaa Pro Xaa Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
          50          55          60

Ile Phe Thr Xaa Thr Xaa Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65          70          75          80

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38_21_56191_APCT_SequenceListing_ST25.txt

Ser Gln Thr Val Ser Phe Xaa Lys Lys Thr Thr Thr Xaa Thr Xaa Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Xaa Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Xaa Val Xaa Ile Pro Phe Ile Gly Xaa Gly Gly Xaa
115 120 125

Lys Asn Ser Thr Xaa Xaa Xaa Ala Xaa Xaa Xaa His Asn Ser Ser Thr
130 135 140

Xaa Thr Xaa Xaa Xaa Xaa Xaa Thr Xaa Ile Xaa Trp Xaa Xaa Xaa Gln
145 150 155 160

Pro Val Leu Val Pro Pro Xaa Lys Gln Val Val Ala Thr Leu Xaa Ile
165 170 175

Xaa Gly Gly Xaa Phe Xaa Ile Pro Met Asp Xaa Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu Xaa Xaa Xaa Xaa Xaa Gly Tyr Pro Ile Leu Thr Xaa
195 200 205

Ile Ser Ser Pro Asp Asn Ser Tyr Xaa Gly Xaa Phe Met Ser Xaa Tyr
210 215 220

Phe Ala Asn Trp Pro Asn Leu Pro Ser Gly Xaa Gly Pro Leu Xaa Ser
225 230 235 240

Xaa Asn Xaa Xaa Xaa Xaa Xaa Gly Xaa Xaa Xaa Xaa Gln Val Ser Ala
245 250 255

Gly Val Tyr Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu
260 265 270

Xaa Xaa Xaa Glu Lys Thr Trp Tyr Ala Xaa His Ala Thr Leu Xaa Asn
275 280 285

Gly Lys Lys Ile Xaa Ile Xaa Asn Val Thr Xaa Xaa Ala Pro Xaa Ser
290 295 300

Xaa Xaa Lys Xaa Asn
305

<210> 181
<211> 927
<212> DNA
<213> Bacillus thuringiensis

<220>

38_21_56191_APCT_SequenceListing_ST25.txt

<221> misc_feature
<223> is a sequence representing a recombinant polynucleotide derived from a native gene from a *Bacillus thuringiensis* (Bt) species encoding a Cry51Aa1 protein

<300>
<308> DQ836184
<309> 2007-08-01
<313> (1)..(927)

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<400> 181
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ggtcctaaaa ataataatgg catacagggt ggtgattttg gttaccctat atcagaaaaa      120
caaatagata cgtctattat aacttctact catcctcggt taattccaca tgatttaaca      180
attcctcaaa atttagaaac tttttttact acaactcaag tattaacaaa taatacagat      240
ttacaacaaa gtcaaactgt ttcttttgct aaaaaaaca cgacaacaac ttcaacttca      300
actacaaatg gttggacaga aggtgggaaa atttcagata cattagaaga aaaagtaagt      360
gtatctattc cttttattgg agagggagga ggaaaaaaca gtacaactat agaagctaata      420
tttgcacata actctagtag tactactttt caacaggctt caactgatat agagtggaaat      480
atttcacaac cagtattgggt tcccccacgt aaacaagttg tagcaacatt agttattatg      540
ggaggtaatt ttactattcc tatggatttg atgactacta tagattctac agaacattat      600
agtggttatc caatattaac atggatatcg agccccgata atagttataa tgggtccattt      660
atgagttggt attttgcaaa ttggcccaat ttaccatcgg ggttttggtcc tttaaattca      720
gataatacgg tcacttatac aggttctgtt gtaagtcaag tatcagctgg tgtatatgcc      780
actgtacgat ttgatcaata tgatatacac aatttaagga caattgaaaa aacttggtat      840
gcacgacatg caactcttca taatggaaaag aaaatatcta taaataatgt tactgaaatg      900
gcaccaacaa gtccaataaa aacaaat                                           927
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<210> 182
<211> 309
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<220>
<221> misc_feature
<223> is an amino acid sequence translation of nucleotide (NT) positions 1 through 927 of SEQ ID NO: 181

<300>
<308> ABI14444
<309> 2007-08-01
<313> (1)..(309)

<400> 182

Met Ile Phe Leu Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala
1 5 10 15

38_21_56191_APCT_SequenceListing_ST25.txt

Ile Asn Tyr Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp
20 25 30

Phe Gly Tyr Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr
35 40 45

Ser Thr His Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn
50 55 60

Leu Glu Thr Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp
65 70 75 80

Leu Gln Gln Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr
85 90 95

Thr Ser Thr Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser
100 105 110

Asp Thr Leu Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu
115 120 125

Gly Gly Gly Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn
130 135 140

Ser Ser Thr Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn
145 150 155 160

Ile Ser Gln Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr
165 170 175

Leu Val Ile Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr
180 185 190

Thr Ile Asp Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp
195 200 205

Ile Ser Ser Pro Asp Asn Ser Tyr Asn Gly Pro Phe Met Ser Trp Tyr
210 215 220

Phe Ala Asn Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser
225 230 235 240

Asp Asn Thr Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala
245 250 255

Gly Val Tyr Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu
260 265 270

Arg Thr Ile Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn
275 280 285

38_21_56191_APCT_SequenceListing_ST25.txt

Gly Lys Lys Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser
290 295 300

Pro Ile Lys Thr Asn
305

<210> 183
<211> 918
<212> DNA
<213> Bacillus thuringiensis

<220>
<221> misc_feature
<223> is a sequence representing a recombinant polynucleotide derived from a native gene from a Bacillus thuringiensis (Bt) species encoding a TIC853 protein

<400> 183
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aataataatg gtatacaggg ttataatttt aattacccta ttcagaaaag acaaatagat 120
acgtcgatta taacttctac tcattctcgt ttaatgccac atgatttaac aattcctcaa 180
aatttagaaa ctatTTTTTAC tacaactcaa gtattaacaa ataatacaga tgtacaacaa 240
agtcaaaactg tttctTTTTTc taaaaaaaca acgacaacaa cttcaacttc aactacagat 300
ggttggacag aaggtgggag aatttcagat acattagaag aaaacgtaag tgtatctatt 360
ccttttattg gagcgggagg agcaaaaaac agtacaacta tagaagctaa tgttgcacat 420
aactctagta ctactacttc tcaacaggct tcaactgaga tagagtggaa tatttcacaa 480
ccagtattgg ttccccacg taaacaagtt gtagcaacat tagttattat gggaggtgat 540
tttactgttc ctatggattt gataactact atagattcta cacaacattt tactggttat 600
ccaatattaa catggataga gaaccccgag cataatgtta gaggtcgatt tctgagttgg 660
ttttttgcaa attggcccaa tttaccatcg gagtttggtt ctttaaattc agataatacg 720
atcacttata aaggttctgt tgtaagtcga atatcagctg gtgtatatgc tactgtacga 780
tttgatcaat atgctataaa taatttaaga acaattgaaa aaacttggtg tgcacgacat 840
ggaactcttc ataatggaaa gaaaatatct ataaataatg ttactgaaat ggcaccaaca 900
agtccaatag aaagaaat 918

<210> 184
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<220>
<221> misc_feature
<223> is an amino acid sequence translation of nucleotide (NT) positions 1 through 918 of SEQ ID NO: 183

38_21_56191_APCT_SequenceListing_ST25.txt

<400> 184

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asp Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Tyr Asn Phe Asn Tyr
20 25 30

Pro Ile Ser Glu Arg Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
35 40 45

Ser Arg Leu Met Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Val Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ser Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asp Gly Trp Thr Glu Gly Gly Arg Ile Ser Asp Thr Leu
100 105 110

Glu Glu Asn Val Ser Val Ser Ile Pro Phe Ile Gly Ala Gly Gly Ala
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Val Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Ser Gln Gln Ala Ser Thr Glu Ile Glu Trp Asn Ile Ser Gln
145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asp Phe Thr Val Pro Met Asp Leu Ile Thr Thr Ile Asp
180 185 190

Ser Thr Gln His Phe Thr Gly Tyr Pro Ile Leu Thr Trp Ile Glu Asn
195 200 205

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

Trp Pro Asn Leu Pro Ser Glu Phe Gly Ser Leu Asn Ser Asp Asn Thr
225 230 235 240

Ile Thr Tyr Lys Gly Ser Val Val Ser Arg Ile Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Ala Ile Asn Asn Leu Arg Thr Ile
Page 238

Glu Lys Thr Trp Tyr Ala Arg His Gly Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Glu
290 295 300

Arg Asn
305

<210> 185
<211> 309
<212> PRT
<213> Artificial Sequence

<220>
<223> engineered

<220>
<221> misc_feature
<223> is TIC807 (SEQ ID NO: 2) position 11 Leucine substituted by a Methionine

<400> 185

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Met Asn Ala Ile Asn Tyr
1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Phe Thr His
35 40 45

Pro Arg Leu Ile Pro Tyr Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ser Thr
85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
130 135 140

Thr Thr Phe Gln Gln Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
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145 150 155 160

Pro Val Leu Val Pro Pro Ser Lys Gln Val Val Ala Thr Leu Val Ile
165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
180 185 190

Ser Thr Glu His Tyr Ser His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp
195 200 205

Ile Ser Ser Pro Asp Asn Ser Tyr Ser Gly Pro Phe Met Ser Trp Tyr
210 215 220

Phe Ala Asn Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser
225 230 235 240

Asp Asn Thr Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala
245 250 255

Gly Val Tyr Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu
260 265 270

Arg Thr Ile Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn
275 280 285

Gly Lys Lys Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser
290 295 300

Pro Ile Lys Thr Asn
305

<210> 186
<211> 930
<212> DNA
<213> Artificial Sequence

<220>
<223> engineered

<220>
<221> misc_feature
<223> A nucleotide sequence encoding SEQ ID NO: 4 with an open reading
frame from 1 to 927.

<400> 186
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aacaacaacg gcatccaggg cggtgacttc ggctacccca tctctgagaa gcagatcgac 120
actagcatca ttaccttcac ccaccctcgc ttgatccctt acgatcttac tatcccgag 180
aaccttgaga ccatcttcac cacaacgcag gtgctcacca ataactga cctccagcaa 240
tcccagaccg tgagctttgc gaagaagacc actaccacga cctcaactag cagcaccaac 300

38_21_56191_APCT_SequenceListing_ST25.txt

ggttggacag aaggaggcaa gatcagcgac acgctggagg agaaagtttc ggtttagcatt	360
ccgttcatcg gtgcgggtgg cgggaagaac tcgactacca tagaggccaa cttcgcacac	420
aactctagca ccactacctt ccagcaagca agcactgaca ttgagtggaa cattagccaa	480
ccggtgctgg ttctccctc taaacaagtt gtcgcgaccc ttgtgatcat gggaggcaac	540
tttaccatcc ctatggactt gatgaccacg attgatagta cagagcacta ctcccactac	600
tccggttacc ctatcctcac ctggatctcg tccccagata actcttactc cggtcctttt	660
atgtcatggt actttgcaaa ctggcctaac cttccgagtg gattcggccc actgaatagt	720
gataacacgg tcacatacac tggctctgtc gtgtcccaag tttcggccgg tgtctacgct	780
accgtccggt tcgatcagta tgacattcac aatctccgta ctatcgagaa gacttggtat	840
gctcgccatg cgacgctgca taatggcaag aagatttcta tcaacaatgt cacggaaatg	900
gctccaacat cccctatcaa gacaaattga	930

<210> 187
 <211> 930
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> engineered

<220>
 <221> misc_feature
 <223> A nucleotide sequence encoding SEQ ID NO: 6 with an open reading frame from 1 to 927.

<400> 187	
atggctatcc tagaccttaa gtccctcgtg ctgaacgcc ttaactactg gggccctaag	60
aacaacaacg gcatccaggg cggtgacttc ggctacccca tctctgagaa gcagatcgac	120
actagcatca ttaccttcac ccaccctcgc ttgatccctt acgatcttac tatcccgcag	180
aaccttgaga ccatcttcac cacaacgcag gtgctcacca ataactactga cctccagcaa	240
tcccagaccg tgagctttgc gaagaagacc actaccacga cctcaactag cacgaccaac	300
ggttggacag aaggaggcaa gatcagcgac acgctggagg agaaagtttc ggtttagcatt	360
ccgttcatcg gtgagggtgg cgggaagaac tcgactacca tagaggccaa cttcgcacac	420
aactctagca ccactaccgc ccagcaagca agcactgaca ttgagtggaa cattagccaa	480
ccggtgctgg ttctccctc taaacaagtt gtcgcgaccc ttgtgatcat gggaggcaac	540
tttaccatcc ctatggactt gatgaccacg attgatagta cagagcacta ctcccactac	600
tccggttacc ctatcctcac ctggatctcg tccccagata actcttactc cggtcctttt	660
atgtcatggt actttgcaaa ctggcctaac cttccgagtg gattcggccc actgaatagt	720
gataacacgg tcacatacac tggctctgtc gtgtcccaag tttcggccgg tgtctacgct	780
accgtccggt tcgatcagta tgacattcac aatctccgta ctatcgagaa gacttggtat	840
gctcgccatg cgacgctgca taatggcaag aagatttcta tcaacaatgt cacggaaatg	900

gctccaacat cccctatcaa gacaaattga

930

<210> 188
 <211> 921
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> engineered

<220>
 <221> misc_feature
 <223> A nucleotide sequence encoding SEQ ID NO: 8 with an open reading frame from 1 to 918.

<400> 188
 atggctatcc tagaccttaa gtccctcgtg ctgaacgcca ttaactactg gggccctaag 60
 aacaacaacg gcatccaggg cggtgacttc ggctacccca tctctgagaa gcagatcgac 120
 actagcatca ttacctccac ccaccctcgc ttgatccccc acgatcttac tatcccgag 180
 aaccttgaga ccatcttcac cacaacgcag gtgctcacca ataactga cctccagcaa 240
 tcccagaccg tgagctttgc gaagaagacc actaccacga cctcaactag cagcaccaac 300
 ggttgacag aaggaggcaa gatcagcgac acgctggagg agaaagtctt ggtagcatt 360
 ccgttcatcg gtgagggtgg cggaagaac tcgactacca tagaggccaa cttcgcacac 420
 aactctagca ccactacctt ccagcaagca agcactgaca ttgagtggaa cattagccaa 480
 ccggtccttg tgcctccccg caaacagggt gttgccactc tcgttatcat gggtaggaac 540
 ttactattc ctatggatct tatgactacc attgactcta ctgagcacta ctctggctac 600
 cccatttctca cttggatctc ttctcctgac aatagctaca acggtccatt catgtcatgg 660
 tacttcgcta actggccgaa tctcccttct ggctttgggtc ctcttaactc tgataaact 720
 gtgacctaca ctggctctgt cgtcagtcag gtctctgccg gtgtgtacgc aactgttcgc 780
 ttcgatcagt atgacatcca taatctcagg actattgaga agacctggta cgctcgtcat 840
 gcgacgcttc acaacggcaa gaagatcagc atcaataacg tgacagaaat ggcccctacc 900
 agcccgatca agactaactg a 921

<210> 189
 <211> 921
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> engineered

<220>
 <221> misc_feature
 <223> A nucleotide sequence encoding SEQ ID NO: 10 with an open reading frame from 1 to 918.

<400> 189
 atggctatcc tagaccttaa gtccctcgtg ctgaacgcca ttaactactg gggccctaag 60

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aacaacaacg gcatccaggg cggtgacttc ggctacccca tctctgagaa gcagatcgac	120
actagcatca ttacctccac ccaccctcgc ttgatccccc acgatcttac tatcccgcag	180
aaccttgaga ccatcttcac cacaacgcag gtgctcacca ataactga cctccagcaa	240
tcccagaccg tgagctttgc gaagaagacc actaccgcga cctcaactag cacgaccaac	300
ggttggacag aaggaggcaa gatcagcgac acgctggagg agaaagtttc ggtagcatt	360
ccgttcatcg gtgaggggtg cggaagaac tcgactacca tagaggccaa cttcgcacac	420
aactctagca ccactacctt ccagcaagca agcactgaca ttgagtggaa cattagccaa	480
ccggtccttg tgcctccccg caaacagggtt gttgccactc tcgttatcat gggtaggaac	540
ttcactattc ctatggatct tatgactacc attgactcta ctgagcacta ctctggctac	600
cccatttcta cttggatctc ttctcctgac aatagctaca acggtccatt catgtcatgg	660
tacttcgcta actggccgaa tctcccttct ggctttggtc ctcttaactc tgataaact	720
gtgacctaca ctggctctgt cgtcagtcag gtctctgccg gtgtgtacgc aactgttcgc	780
ttcgatcagt atgacatcca taatctcagg actattgaga agacctggta cgctcgtcat	840
gcgacgcttc acaacggcaa gaagatcagc atcaataacg tgacagaaat ggcccctacc	900
agcccgatca agactaactg a	921

<210> 190
 <211> 921
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> engineered

<220>
 <221> misc_feature
 <223> A nucleotide sequence encoding SEQ ID NO: 12 with an open reading frame from 1 to 918.

<400> 190	
atggctatcc tagaccttaa gtccctcgtg ctgaacgccca ttaactactg gggccctaag	60
aacaacaacg gcatccaggg cggtgacttc ggctacccca tctctgagaa gcagatcgac	120
actagcatca ttacctccac ccaccctcgc ttgatccccc acgatcttac tatcccgcag	180
aaccttgaga ccatcttcac cacaacgcag gtgctcacca ataactga cctccagcaa	240
tcccagaccg tgagctttgc gaagaagacc actaccacga ccgcaactag cacgaccaac	300
ggttggacag aaggaggcaa gatcagcgac acgctggagg agaaagtttc ggtagcatt	360
ccgttcatcg gtgaggggtg cggaagaac tcgactacca tagaggccaa cttcgcacac	420
aactctagca ccactacctt ccagcaagca agcactgaca ttgagtggaa cattagccaa	480
ccggtccttg tgcctccccg caaacagggtt gttgccactc tcgttatcat gggtaggaac	540
ttcactattc ctatggatct tatgactacc attgactcta ctgagcacta ctctggctac	600
cccatttcta cttggatctc ttctcctgac aatagctaca acggtccatt catgtcatgg	660

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tacttcgcta actggccgaa tctcccttct ggctttggtc ctcttaactc tgataaact	720
gtgacctaca ctggctctgt cgtcagtcag gtctctgccg gtgtgtacgc aactgttcgc	780
ttcgatcagt atgacatcca taatctcagg actattgaga agacctggta cgctcgatcat	840
gcgacgcttc acaacggcaa gaagatcagc atcaataacg tgacagaaat ggcccctacc	900
agcccgatca agactaactg a	921

<210> 191
 <211> 921
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> engineered

<220>
 <221> misc_feature
 <223> A nucleotide sequence encoding SEQ ID NO: 14 with an open reading frame from 1 to 918.

<400> 191	
atggctatcc tagaccttaa gtccctcgtg ctgaacgcca ttaactactg gggccctaag	60
aacaacaacg gcatccaggg cgggtgacttc ggctacccca tctctgagaa gcagatcgac	120
actagcatca ttacctccac ccaccctcgc ttgatcccc acgatcttac tatcccgag	180
aaccttgaga ccatcttcac cacaacgcag gtgctcacca ataactga cctccagcaa	240
tcccagaccg tgagctttgc gaagaagacc actaccacga cctcaactag cacgaccaac	300
ggttggacag aaggaggcaa gatcagcgac acgctggagg agaaagtttc ggtttagcatt	360
ccgttcatcg gtgaggggtg cggaagaac tcgactacca tagaggccaa cttcgcacac	420
aactctagca ccactaccgc ccagcaagca agcactgaca ttgagtggaa cattagccaa	480
ccggtccttg tgcctccccg caaacagggtt gttgccactc tcgttatcat ggggtggcaac	540
ttcactattc ctatggatct tatgactacc attgactcta ctgagcacta ctctggctac	600
cccatttctca cttggatctc ttctcctgac aatagctaca acgggtccatt catgtcatgg	660
tacttcgcta actggccgaa tctcccttct ggctttggtc ctcttaactc tgataaact	720
gtgacctaca ctggctctgt cgtcagtcag gtctctgccg gtgtgtacgc aactgttcgc	780
ttcgatcagt atgacatcca taatctcagg actattgaga agacctggta cgctcgatcat	840
gcgacgcttc acaacggcaa gaagatcagc atcaataacg tgacagaaat ggcccctacc	900
agcccgatca agactaactg a	921

<210> 192
 <211> 921
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> engineered

38_21_56191_APCT_SequenceListing_ST25.txt

<220>
 <221> misc_feature
 <223> A nucleotide sequence encoding SEQ ID NO: 16 with an open reading frame from 1 to 918.

<400> 192
 atggctatcc tagaccttaa gtccctcgtg ctgaacgcca ttaactactg gggccctaag 60
 aacaacaacg gcatccaggg cggtgacttc ggctacccca tctctgagaa gcagatcgac 120
 actagcatca ttacctccac ccaccctcgc ttgatccccc acgatcttac tatcccgag 180
 aaccttgaga ccatcttcac cacaacgcag gtgctcacca ataactga cctccagcaa 240
 tcccagaccg tgagctttgc gaagaagacc actaccacga cgcgaactag cagcaccaac 300
 gggttgacag aaggaggcaa gatcagcgac acgctggagg agaaagtttc ggtagcatt 360
 ccgttcatcg gtgaggggtg cggaagaac tcgactacca tagaggccaa cttcgcacac 420
 aactctagca ccactaccgc ccagcaagca agcactgaca ttgagtggaa cattagccaa 480
 ccggtccttg tgcctccccg caaacagggt gttgccactc tcgttatcat gggtagaac 540
 ttcactattc ctatggatct tatgactacc attgactcta ctgagcacta ctctggctac 600
 cccatttctca cttggatctc ttctcctgac aatagctaca acggtccatt catgtcatgg 660
 tacttcgcta actggccgaa tctcccttct ggctttgggtc ctcttaactc tgataaact 720
 gtgacctaca ctggctctgt cgtcagtcag gtctctgccg gtgtgtacgc aactgttcgc 780
 ttcgatcagt atgacatcca taatctcagg actattgaga agacctggta cgctcgtcat 840
 gcgacgcttc acaacggcaa gaagatcagc atcaataacg tgacagaaat ggcccctacc 900
 agcccgatca agactaactg a 921

<210> 193
 <211> 921
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> engineered

<220>
 <221> misc_feature
 <223> A nucleotide sequence encoding SEQ ID NO: 18 with an open reading frame from 1 to 918.

<400> 193
 atggctatcc tagaccttaa gtccctcgtg ctgaacgcca ttaactactg gggccctaag 60
 aacaacaacg gcatccaggg cggtgacttc ggctacccca tctctgagaa gcagatcgac 120
 actagcatca ttacctccac ccaccctcgc ttgatccccc acgatcttac tatcccgag 180
 aaccttgaga ccatcttcac cacaacgcag gtgctcacca ataactga cctccagcaa 240
 tcccagaccg tgagctttgc gaagaagacc actaccgca cctcaactag cagcaccaac 300
 gggttgacag aaggaggcaa gatcagcgac acgctggagg agaaagtttc ggtagcatt 360
 ccgttcatcg gtgaggggtg cggaagaac tcgactacca tagaggccaa cttcgcacac 420

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aactctagca ccactaccgc ccagcaagca agcactgaca ttgagtggaa cattagccaa	480
ccggtccttg tgcctccccg caaacagggtt gttgccactc tcgttatcat ggggtggcaac	540
ttcactattc ctatggatct tatgactacc attgactcta ctgagcacta ctctggctac	600
cccattctca cttggatctc ttctcctgac aatagctaca acggtccatt catgtcatgg	660
tacttcgcta actggccgaa tctcccttct ggctttgggtc ctcttaactc tgataaact	720
gtgacctaca ctggctctgt cgtcagtcag gtctctgccg gtgtgtacgc aactgttcgc	780
ttcgatcagt atgacatcca taatctcagg actattgaga agacctggta cgctcgtcat	840
gcgacgcttc acaacggcaa gaagatcagc atcaataacg tgacagaaat ggcccctacc	900
agcccgatca agactaactg a	921

<210> 194
 <211> 921
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> engineered

<220>
 <221> misc_feature
 <223> A nucleotide sequence encoding SEQ ID NO: 20 with an open reading frame from 1 to 918.

<400> 194	
atggctatcc tagacctaa gtccctcgtg ctgaacgcca ttaactactg gggccctaag	60
aacaacaacg gcatccaggg cggtgacttc ggctaccca tctctgagaa gcagatcgac	120
actagcatca ttacctccac ccaccctcgc ttgatcccc acgatcttac tatcccgag	180
aaccttgaga ccatcttcac cacaacgcag gtgctcacca ataactga cctccagcaa	240
tcccagaccg tgagctttgc gaagaagacc actaccacga cctcaactag cacgaccaac	300
ggttggacag aaggaggcaa gatcagcgac acgctggagg agaaagtttc ggttagcatt	360
ccgttcatcg gtgaggggtg cggaagaac tcgactacca tagaggccaa cttcgcacac	420
aactctagca ccactacctt ccaggaggca agcactgaca ttgagtggaa cattagccaa	480
ccggtccttg tgcctccccg caaacagggtt gttgccactc tcgttatcat ggggtggcaac	540
ttcactattc ctatggatct tatgactacc attgactcta ctgagcacta ctctggctac	600
cccattctca cttggatctc ttctcctgac aatagctaca acggtccatt catgtcatgg	660
tacttcgcta actggccgaa tctcccttct ggctttgggtc ctcttaactc tgataaact	720
gtgacctaca ctggctctgt cgtcagtcag gtctctgccg gtgtgtacgc aactgttcgc	780
ttcgatcagt atgacatcca taatctcagg actattgaga agacctggta cgctcgtcat	840
gcgacgcttc acaacggcaa gaagatcagc atcaataacg tgacagaaat ggcccctacc	900
agcccgatca agactaacta g	921

<210> 195

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<211> 921
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> engineered

<220>
 <221> misc_feature
 <223> A nucleotide sequence encoding SEQ ID NO: 22 with an open reading frame from 1 to 918.

<400> 195
 atggctatcc tagaccttaa gtccctcgtg ctgaacgccca ttaactactg gggccctaag 60
 aacaacaacg gcatccaggg cggtgacttc ggctacccca tctctgagaa gcagatcgac 120
 actagcatca ttacctccac ccaccctcgc ttgatccccc acgatcttac tatcccgag 180
 aaccttgaga ccatcttcac cacaacgcag gtgctcacca ataactactga cctccagcaa 240
 tcccagaccg tgagctttgc gaagaagacc actaccgcga cctcaactag caccagcaaac 300
 gggtggacag aaggaggcaa gatcagcgac acgctggagg agaaagtctt ggtagcatt 360
 ccgttcacg gtgaggggtg cggaagaac tcgactacca tagaggccaa cttcgcacac 420
 aactctagca ccactacctt ccaggcagca agcactgaca ttgagtggaa cattagccaa 480
 ccggtccttg tgcctccccg caaacagggt gttgccactc tcgttatcat gggtaggaac 540
 ttactatttc ctatggatct tatgactacc attgactcta ctgagcacta ctctggctac 600
 cccattctca cttggatctc ttctcctgac aatagctaca acgggtccatt catgtcatgg 660
 tacttcgcta actggccgaa tctcccttct ggctttgggtc ctcttaactc tgataaact 720
 gtgacctaca ctggctctgt cgtcagtcag gtctctgccg gtgtgtacgc aactgttcgc 780
 ttcgatcagt atgacatcca taatctcagg actattgaga agacctggta cgctcgtcat 840
 gcgacgcttc acaacggcaa gaagatcagc atcaataacg tgacagaaat ggcccctacc 900
 agcccgatca agactaactg a 921

<210> 196
 <211> 921
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> engineered

<220>
 <221> misc_feature
 <223> A nucleotide sequence encoding SEQ ID NO: 24 with an open reading frame from 1 to 918.

<400> 196
 atggctatcc tagaccttaa gtccctcgtg ctgaacgccca ttaactactg gggccctaag 60
 aacaacaacg gcatccaggg cggtgacttc ggctacccca tctctgagaa gcagatcgac 120
 actagcatca ttacctccac ccaccctcgc ttgatccccc acgatcttac tatcccgag 180

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```

aaccttgaga ccatcttcac cacaacgcag gtgctcacca ataactga cctccagcaa      240
tcccagaccg tgagctttgc gaagaagacc actaccgcga cctcaactag cagcaccaac      300
ggttggacag aaggaggcaa gatcagcgac acgctggagg agaaagtttc ggtagcatt      360
ccgttcacg  gtgaggggtg cggaagaac tcgactacca tagaggccaa cttcgcacac      420
aactctagca ccactacctt ccaggaggca agcactgaca ttgagtggaa cattagccaa      480
ccggtccttg tgcctccccg caaacagggtt gttgccactc tcgttatcat gggtaggaac      540
ttcactattc ctatggatct tatgactacc attgactcta ctgagcacta ctctggctac      600
cccattctca cttggatctc ttctcctgac aatagctaca acggtccatt catgtcatgg      660
tacttcgcta actggccgaa tctcccttct ggctttgggtc ctcttaactc tgataaact      720
gtgacctaca ctggctctgt cgtcagtcag gtctctgccg gtgtgtacgc aactgttcgc      780
ttcgatcagt atgacatcca taatctcagg actattgaga agacctggta cgctcgtcat      840
gcgacgcttc acaacggcaa gaagatcagc atcaataacg tgacagaaat ggcccctacc      900
agcccgatca agactaactg a                                           921

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<210> 197
<211> 921
<212> DNA
<213> Artificial Sequence

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<220>
<223> engineered

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<220>
<221> misc_feature
<223> A nucleotide sequence encoding SEQ ID NO: 26 with an open reading
frame from 1 to 918.

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<400> 197
atggctatcc tagaccttaa gtccctcgtg ctgaacgcc a ttaactactg gggccctaag      60
aacaacaacg gcatccaggg cggtagcttc ggctacccca tctctgagaa gcagatcgac      120
actagcatca ttacctccac ccaccctcgc ttgatcccc acgatcttac tatcccgag      180
aaccttgaga ccatcttcac cacaacgcag gtgctcacca ataactga cctccagcaa      240
tcccagaccg tgagctttgc gaagaagacc actaccacga ccgcaactag cagcaccaac      300
ggttggacag aaggaggcaa gatcagcgac acgctggagg agaaagtttc ggtagcatt      360
ccgttcacg  gtgaggggtg cggaagaac tcgactacca tagaggccaa cttcgcacac      420
aactctagca ccactaccgc ccagcaagca agcactgaca ttgagtggaa cattagccaa      480
ccggtccttg tgcctccccg caaacagggtt gttgccactc tcgttatcat gggtaggaac      540
ttcactattc ctatggatct tatgactacc attgactcta ctgagcacta ctctggctac      600
cccattctca cttggatctc ttctcctgac aatagctaca gcggtccatt catgtcatgg      660
tacttcgcta actggccgaa tctcccttct ggctttgggtc ctcttaactc tgataaact      720
gtgacctaca ctggctctgt cgtcagtcag gtctctgccg gtgtgtacgc aactgttcgc      780

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ttcgatcagt atgacatcca taatctcagg actattgaga agacctggta cgctcgtc	840
gcgacgcttc acaacggcaa gaagatcagc atcaataacg tgacagaaat ggcccctacc	900
agcccgatca agactaactg a	921

<210> 198
 <211> 921
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> engineered

<220>
 <221> misc_feature
 <223> A nucleotide sequence encoding SEQ ID NO: 28 with an open reading frame from 1 to 918.

<400> 198	
atggctatcc tagaccttaa gtccctcgtg ctgaacgcca ttaactactg gggccctaag	60
aacaacaacg gcatccaggg cggtgacttc ggctaccca tctctgagaa gcagatcgac	120
actagcatca ttacctccac ccaccctcgc ttgatcccc acgatcttac tatcccgcag	180
aaccttgaga ccatcttcac cacaacgcag gtgctcacca ataactga cctccagcaa	240
tcccagaccg tgagctttgc gaagaagacc actaccacga ccgcaactag cagaccaac	300
ggttggacag aaggaggcaa gatcagcgac acgctggagg agaaagtttc ggttagcatt	360
ccgttcatcg gtgagggtgg cggaagaac tcgactacca tagaggccaa cttcgcacac	420
aactctagca ccactaccgc ccagcaagca agcactgaca ttgagtggaa cattagccaa	480
ccggtccttg tgcctccccg caaacagggtt gttgccactc tcgttatcat ggggtggcaac	540
ttcactattc ctatggatct tatgactacc attgactcta ctgagcacta ctctggctac	600
cccattctca cttggatctc ttctcctgac aatagctaca gcggtcgatt catgtcatgg	660
tacttcgcta actggccgaa tctcccttct ggctttggtc ctcttaactc tgataaact	720
gtgacctaca ctggctctgt cgtcagtcag gtctctgccg gtgtgtacgc aactgttcgc	780
ttcgatcagt atgacatcca taatctcagg actattgaga agacctggta cgctcgtc	840
gcgacgcttc acaacggcaa gaagatcagc atcaataacg tgacagaaat ggcccctacc	900
agcccgatca agactaactg a	921

<210> 199
 <211> 921
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> engineered

<220>
 <221> misc_feature
 <223> A nucleotide sequence encoding SEQ ID NO: 30 with an open reading frame from 1 to 918.

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<400> 199
atggctatcc tagaccttaa gtccctcgtg ctgaacgcca ttaactactg gggccctaag      60
aacaacaacg gcatccaggg cggtgacttc ggctacccca tctctgagaa gcagatcgac      120
actagcatca ttacctccac ccaccctcgc ttgatccccc acgatcttac tatcccgag      180
aaccttgaga ccatcttcac cacaacgcag gtgctcacca ataactactga cctccagcaa      240
tcccagaccg tgagctttgc gaagaagacc actaccacga cgcgaactag cacgaccaac      300
ggttggacag aaggaggcaa gatcagcgac acgctggagg agaaagtttc ggtttagcatt      360
ccgttcacg gtgaggggtg cggaagaac tcgactacca tagaggccaa cttcgcacac      420
aactctagca ccactaccgc ccagcaagca agcactgaca ttgagtggaa cattagccaa      480
ccggtccttg tgcctccccg caaacagggtt gttgccactc tcgttatcat ggggtggcaac      540
ttcactattc ctatggatct tatgactacc attgactcta ctgagcacta ctctggctac      600
cccattctca cttggatctc ttctcctgac aatagctaca gcggtcgatt catgtcatgg      660
tacttcgcta actggccgaa tctcccttct ggctttggtc ctcttaactc tgataaact      720
gtgacctaca ctggctctgt cgccagtcag gtctctgccg gtgtgtacgc aactgttcgc      780
ttcgatcagt atgacatcca taatctcagg actattgaga agacctggta cgctcgatcat      840
gcgacgcttc acaacggcaa gaagatcagc atcaataacg tgacagaaat ggcccctacc      900
agcccgatca agactaactg a                                     921

```

```

<210> 200
<211> 921
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> engineered

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<220>
<221> misc_feature
<223> A nucleotide sequence encoding SEQ ID NO: 32 with an open reading
      frame from 1 to 918.

```

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<400> 200
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actagcatca ttacctccac ccaccctcgc ttgatccccc acgatcttac tatcccgag      180
aaccttgaga ccatcttcac cacaacgcag gtgctcacca ataactactga cctccagcaa      240
tcccagaccg tgagctttgc gaagaagacc actaccacga cgcgaactag cacgaccaac      300
ggttggacag aaggaggcaa gatcagcgac acgctggagg agaaagtttc ggtttagcatt      360
ccgttcacg gtgaggggtg cggaagaac tcgactacca tagaggccaa cttcgcacac      420
aactctagca ccactaccgc ccagcaagca agcactgaca ttgagtggaa cattagccaa      480
ccggtccttg tgcctccccg caaacagggtt gttgccactc tcgttatcat ggggtggcaac      540

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ttcactattc ctatggatct tatgactacc attgactcta ctgagcacta ctctggctac	600
cccatcttca cttggatctc ttctcctgac aatagctaca gcggtcgatt catgtcatgg	660
tacttcgcta actggccgaa tctcccttct ggctttggtc ctcttaactc tgataaact	720
gtgacctaca ctggctctgt cgtcagtcag gtctctgccg gtgtgtacgc aactgttcgc	780
ttcgatcagt atgacatcca taatctctgg actattgaga agacctggta cgctcgtcat	840
gcgacgcttc acaacggcaa gaagatcagc atcaataacg tgacagaaat ggcccctacc	900
agcccgatca agactaactg a	921

<210> 201
 <211> 921
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> engineered

<220>
 <221> misc_feature
 <223> A nucleotide sequence encoding SEQ ID NO: 34 with an open reading frame from 1 to 918.

<400> 201	
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actagcatca ttacctccac ccaccctcgc ttgatccccc acgatcttac tatcccgag	180
aaccttgaga ccatcttcac cacaacgcag gtgctcacca ataactga cctccagcaa	240
tcccagaccg tgagctttgc gaagaagacc actaccacga cgcgaactag cagcaccaac	300
ggttggacag aaggaggcaa gatcagcgac acgctggagg agaaagtttc ggtttagcatt	360
ccgttcatcg gtgagggtag cggaagaac tcgactacca tagaggccaa cttcgcacac	420
aacttagca ccactacctc ccaggaagca agcactgaca ttgagtggaa cattagccaa	480
ccggtccttg tgcctccccg caaacagggt gttgccactc tcgttatcat ggggtggcaac	540
ttcactattc ctatggatct tatgactacc attgactcta ctgagcacta ctctggctac	600
cccatcttca cttggatctc ttctcctgac aatagctaca gcggtcgatt catgtcatgg	660
tacttcgcta actggccgaa tctcccttct ggctttggtc ctcttaactc tgataaact	720
gtgacctaca ctggctctgt cgtcagtcag gtctctgccg gtgtgtacgc aactgttcgc	780
ttcgatcagt atgacatcca taatctctgg actattgaga agacctggta cgctcgtcat	840
gcgacgcttc acaacggcaa gaagatcagc atcaataacg tgacagaaat ggcccctacc	900
agcccgatca agactaactg a	921

<210> 202
 <211> 306
 <212> PRT
 <213> Artificial Sequence

<220>

<223> engineered

<220>

<221> misc_feature

<223> The AA sequence translation of nucleotides 1 through 903 of SEQ ID NO: 15.

<400> 202

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

Val Thr Tyr Thr Gly Ser Val Val Ser Gln Val Ser Ala Gly Val Tyr
245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Arg Thr Ile
260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
290 295 300

Thr Asn
305

<210> 203
<211> 921
<212> DNA
<213> Artificial Sequence

<220>
<223> engineered

<220>
<221> misc_feature
<223> A nucleotide sequence encoding SEQ ID NO: 204 with an open
reading frame from 1 to 918.

<400> 203
atggctatcc tagaccttaa gtccctcgtg ctgaacgcca ttaactactg gggccctaag 60
aacaacaacg gcatccaggg cggtgacttc ggctacccca tctctgagaa gcagatcgac 120
actagcatca ttacctccac ccaccctcgc ttgatccccc acgatcttac tatcccgcag 180
aaccttgaga ccatcttcac cacaacgcag gtgctcacca ataactactga cctccagcaa 240
tcccagaccg tgagctttgc gaagaagacc actaccacga ccgcaactag cacgaccaac 300
ggttggacag aaggaggcaa gatcagcgac acgctggagg agaaagtttc ggtttagcatt 360
ccgttcacg gtgaggggtg cggaagaac tcgactacca tagaggccaa cttcgcacac 420
aactctagca ccactacctc ccaggaagca agcactgaca ttgagtggaa cattagccaa 480
ccggtccttg tgcctccccg caaacagggt gttgccactc tcgttatcat gggtaggcaac 540
ttcactattc ctatggatct tatgactacc attgactcta ctgagcacta ctctggctac 600
cccatttctca cttggatctc ttctcctgac aatagctaca gcggtcgatt catgtcatgg 660
tacttcgcta actggccgaa tctcccttct ggctttgggtc ctcttaactc tgataaact 720
gtgacctaca ctggccgggt cgaaagtcgg gtctctgccg gtgtgtacgc aactgttcgc 780
ttcgatcagt atgacatcca taatctctgg actattgaga agacctggta cgctcgtcat 840
gcgacgcttc acaacggcaa gaagatcagc atcaataacg tgacagaaat ggcccctacc 900

agcccgatca agactaactg a

921

<210> 204
 <211> 306
 <212> PRT
 <213> Artificial sequence

<220>
 <223> engineered

<220>
 <221> misc_feature
 <223> The amino acid sequence translation of the open reading frame set forth as SEQ ID NO: 203.

<400> 204

Met Ala Ile Leu Asp Leu Lys Ser Leu Val Leu Asn Ala Ile Asn Tyr
 1 5 10 15

Trp Gly Pro Lys Asn Asn Asn Gly Ile Gln Gly Gly Asp Phe Gly Tyr
 20 25 30

Pro Ile Ser Glu Lys Gln Ile Asp Thr Ser Ile Ile Thr Ser Thr His
 35 40 45

Pro Arg Leu Ile Pro His Asp Leu Thr Ile Pro Gln Asn Leu Glu Thr
 50 55 60

Ile Phe Thr Thr Thr Gln Val Leu Thr Asn Asn Thr Asp Leu Gln Gln
 65 70 75 80

Ser Gln Thr Val Ser Phe Ala Lys Lys Thr Thr Thr Thr Thr Ala Thr
 85 90 95

Ser Thr Thr Asn Gly Trp Thr Glu Gly Gly Lys Ile Ser Asp Thr Leu
 100 105 110

Glu Glu Lys Val Ser Val Ser Ile Pro Phe Ile Gly Glu Gly Gly Gly
 115 120 125

Lys Asn Ser Thr Thr Ile Glu Ala Asn Phe Ala His Asn Ser Ser Thr
 130 135 140

Thr Thr Ser Gln Glu Ala Ser Thr Asp Ile Glu Trp Asn Ile Ser Gln
 145 150 155 160

Pro Val Leu Val Pro Pro Arg Lys Gln Val Val Ala Thr Leu Val Ile
 165 170 175

Met Gly Gly Asn Phe Thr Ile Pro Met Asp Leu Met Thr Thr Ile Asp
 180 185 190

Ser Thr Glu His Tyr Ser Gly Tyr Pro Ile Leu Thr Trp Ile Ser Ser
 Page 254

195

200

205

Pro Asp Asn Ser Tyr Ser Gly Arg Phe Met Ser Trp Tyr Phe Ala Asn
 210 215 220

Trp Pro Asn Leu Pro Ser Gly Phe Gly Pro Leu Asn Ser Asp Asn Thr
 225 230 235 240

Val Thr Tyr Thr Gly Arg Val Glu Ser Arg Val Ser Ala Gly Val Tyr
 245 250 255

Ala Thr Val Arg Phe Asp Gln Tyr Asp Ile His Asn Leu Trp Thr Ile
 260 265 270

Glu Lys Thr Trp Tyr Ala Arg His Ala Thr Leu His Asn Gly Lys Lys
 275 280 285

Ile Ser Ile Asn Asn Val Thr Glu Met Ala Pro Thr Ser Pro Ile Lys
 290 295 300

Thr Asn
 305

<210> 205
 <211> 2577
 <212> DNA
 <213> Bacillus thuringiensis

<220>
 <221> misc_feature
 <223> AXMI-171 US2010/0298207 A1 SEQ ID NO:204

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 cagatgcagc aacaaatgaa aacacagaat aagagcttta atccgacagt attagccagt 180
 atgccatcgg atacatcgga gcttcaaaaa atgttggaag acgcgattaa aaataaggat 240
 acccagatta ctccggaatt aataaaaaaa cttcaggaca aaggatttga ttaccttagt 300
 attgtaaagg gtttaactgg cggattactg aagcaaattc cgtatgcagg ttcaatcctc 360
 tcccctttgg tagttggcct ttttccaggt aagggttatg taacgaaggc gaatgtctgg 420
 ggagagatac aggatcgctt ttcaaattta atagatcaaa aattagaaga gtcacaagta 480
 aataacttaa ttgggaaact aacgggtatt caggataatt taggaatata ccaaactcgg 540
 gttggtttag ttaatgggat aaaaccacca attgctaatt ttatacaaaa ggatgcaaat 600
 tctgataaaa ataaggagaa ttttaagaagc acaatagact ccttggacaa ggatttaggc 660
 cgagtgatac ctgagtttgc tgttaaaggt tacgaggcag cttctcttcc atattatgta 720
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ggaagtaccg ccgacagttg gaacagaacc aatgcctatg taagaacaat gacattgtat	960
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aaattgcagc aaacacgtga attatattct aacatgatag gaagaccaat aaactggcaa	1080
gactatgata caactcttca acaaattcat aatagtgggt atgcgggtta tccaggcgag	1140
ctgaaacaag ttggtgtttc acagtgggat cgtattgatg gaatcaggga aatatttgat	1200
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tattcggacc gtagccagac cgtcaataac ccagcaatag gaatttcagc atatgaatcc	1320
aataatgcta atttctataa tatgtctact atcacatata aacaaaataa cgaagtatct	1380
tggttctatg gtccatttac tactcaaagc gatagtaaag atggaagtag aatagatagc	1440
aaagctccag cgggccataa attatctcgc gtcaaagtac aagaaaaaag atcagatcta	1500
aatacaatat catcttttgt ggctgcatat gttcctgaag aagttcatcc acagaatata	1560
cttgaggcta aagctattac aggggtacca gctgaaaaat atctcgaca tgcaggattt	1620
gaagataaga ttgaatacat gaatggttcg aatgcatggg tatcttctaa aaatggtgac	1680
acgatagatt acaatgttca aagtccagga aaacaaaaat ataaaatacg cctccgtgtt	1740
gcgacaaata gtgacacatc tgtgggaatc tctataaatg gggatttctca gcaagtgaat	1800
ataaaaaata cagaagccgc aacaaagtta gaagacggta ttacagttaa aggtgtaaat	1860
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cagcttaaaa atagtggtag agctaagatt gcattagatc gaatagaatt tgagcctata	1980
ggcggtagagc tacgcaagtg gaaacaggaa ggtgataagt ggtactttta cgatgaaaat	2040
gataaaaagt taacagggtg gcaaaagatt aatgaaagaa aatactacct tggacattct	2100
ggtgatgggt ctggtatgac cactgaaggg gagatggcaa caggctggaa aacgattgat	2160
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atggcaacag gctggaaaac gataaatgga gtaaaatatt attttgaca gactgggtgat	2280
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ggtatgcaac acgaaggaga aatggcatta ggagatatga cgattgatgg agtaaaacat	2520
cactttaata aaactggtga tggaacgggt cgcgaccatg aaggagagct cgtatgg	2577

<210> 206
 <211> 859
 <212> PRT
 <213> Bacillus thuringiensis

<220>

<221> misc_feature

<223> AXMI-171 US2010/0298207 A1 SEQ ID NO:205

<400> 206

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

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Ala Asp Glu Trp Gly Leu Thr Asp Asp Glu Lys Arg Gly Tyr Leu Ser
260 265 270

Arg Leu Gln Gln Lys Ile Gln Glu Tyr Ser Ser Val Val Tyr Asp Ser
275 280 285

Phe Asn Lys Gly Val Glu Ala Ala Lys Ser Lys Gly Gly Ser Thr Ala
290 295 300

Asp Ser Trp Asn Arg Thr Asn Ala Tyr Val Arg Thr Met Thr Leu Tyr
305 310 315 320

Gly Leu Asp Phe Val Ala Leu Trp Pro Ala Phe Asp Thr Lys His Tyr
325 330 335

Asn Gln Pro Val Lys Leu Gln Gln Thr Arg Glu Leu Tyr Ser Asn Met
340 345 350

Ile Gly Arg Pro Ile Asn Trp Gln Asp Tyr Asp Thr Thr Leu Gln Gln
355 360 365

Ile His Asn Ser Gly Tyr Ala Gly Tyr Pro Gly Glu Leu Lys Gln Val
370 375 380

Gly Val Ser Gln Trp Asp Arg Ile Asp Gly Ile Arg Glu Ile Phe Asp
385 390 395 400

Trp Thr Gly Asp Gly Ser Arg Asp Tyr Thr Leu Gln Trp Gly His Ala
405 410 415

Asn Lys Asn Gly Tyr Ser Asp Arg Ser Gln Thr Val Asn Asn Pro Ala
420 425 430

Ile Gly Ile Ser Ala Tyr Glu Ser Asn Asn Ala Asn Phe Tyr Asn Met
435 440 445

Ser Thr Ile Thr Tyr Lys Gln Asn Asn Glu Val Ser Trp Phe Tyr Gly
450 455 460

Pro Phe Thr Thr Gln Ser Asp Ser Lys Asp Gly Ser Arg Ile Asp Ser
465 470 475 480

Lys Ala Pro Ala Gly His Lys Leu Ser Arg Val Lys Val Gln Glu Lys
485 490 495

Arg Ser Asp Leu Asn Thr Ile Ser Ser Phe Val Ala Ala Tyr Val Pro
500 505 510

Glu Glu Val His Pro Gln Asn Ile Leu Glu Ala Lys Ala Ile Thr Gly
515 520 525

38_21_56191_APCT_SequenceListing_ST25.txt

Val Pro Ala Glu Lys Tyr Leu Ala His Ala Gly Phe Glu Asp Lys Ile
530 535 540

Glu Tyr Met Asn Gly Ser Asn Ala Met Val Ser Ser Lys Asn Gly Asp
545 550 555 560

Thr Ile Asp Tyr Asn Val Gln Ser Pro Gly Lys Gln Lys Tyr Lys Ile
565 570 575

Arg Leu Arg Val Ala Thr Asn Ser Asp Thr Ser Val Gly Ile Ser Ile
580 585 590

Asn Gly Asp Ser Gln Gln Val Asn Ile Lys Asn Thr Glu Ala Ala Thr
595 600 605

Lys Leu Glu Asp Gly Ile Thr Val Lys Gly Val Asn Gly Lys Tyr Met
610 615 620

Leu Ile Asp Gly Pro Thr Val Glu Leu Ser Glu Gly Val Asn Thr Ile
625 630 635 640

Gln Leu Lys Asn Ser Gly Gly Ala Lys Ile Ala Leu Asp Arg Ile Glu
645 650 655

Phe Glu Pro Ile Gly Gly Glu Leu Arg Lys Trp Lys Gln Glu Gly Asp
660 665 670

Lys Trp Tyr Phe Tyr Asp Glu Asn Asp Lys Lys Leu Thr Gly Trp Gln
675 680 685

Lys Ile Asn Glu Arg Lys Tyr Tyr Leu Gly His Ser Gly Asp Gly Ser
690 695 700

Gly Met Thr Thr Glu Gly Glu Met Ala Thr Gly Trp Lys Thr Ile Asp
705 710 715 720

Gly Val Gln Tyr Tyr Phe Gly His Ser Gly Asp Gly Ser Gly Met Val
725 730 735

Thr Glu Gly Glu Met Ala Thr Gly Trp Lys Thr Ile Asn Gly Val Lys
740 745 750

Tyr Tyr Phe Gly Gln Thr Gly Asp Gly Ser Gly Met Gln His Glu Gly
755 760 765

Glu Lys Ala Thr Gly Trp Lys Thr Ile Asp Gly Val Lys Tyr Tyr Phe
770 775 780

Asn Lys Thr Gly Asp Gly Ser Gly Met Gln His Glu Gly Glu Lys Ala
785 790 795 800

38_21_56191_APCT_SequenceListing_ST25.txt

Ile Gly Trp Lys Thr Ile Asp Gly Val Lys Tyr Tyr Phe Asn Lys Thr
805 810 815

Gly Asp Gly Ser Gly Met Gln His Glu Gly Glu Met Ala Leu Gly Asp
820 825 830

Met Thr Ile Asp Gly Val Lys His His Phe Asn Lys Thr Gly Asp Gly
835 840 845

Thr Gly Arg Asp His Glu Gly Glu Leu Val Trp
850 855