

SEQUENCE LISTING

<110> JACOBIO PHARMACEUTICALS CO., LTD
<120> BINDING MOLECULE SPECIFIC FOR LIF AND USE THEREOF
<130> JAB-BX300
<150> PCT/CN2019/108904
<151> 2019-09-29
<150> PCT/CN2020/077049
<151> 2020-02-27
<160> 83
<170> PatentIn version 3.5
<210> 1
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Arg Ala Ser Glu Asn Ile Tyr Ser Tyr Leu Ala
1 5 10

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Asn Ala Lys Thr Leu Ala Glu
1 5

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<400> 3

Gln His His Tyr Val Thr Pro Leu Thr
1 5

<210> 4

<211> 5

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<213> Artificial Sequence

<220>

<223> synthetic polypeptide

<400> 4

Ser Tyr Ala Met Ser
1 5

<210> 5

<211> 17

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<213> Artificial Sequence

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<400> 5

Thr Ile Ser Ser Gly Gly Ser Asn Thr Tyr Ser Pro Asp Thr Val Lys
1 5 10 15

Gly

<210> 6

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<400> 6

Tyr Tyr Gly Tyr Tyr Phe Asp Phe
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<210> 7

<211> 108

<212> PRT

<213> Artificial Sequence

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<400> 7

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

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

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ser Pro Lys Leu Leu Val
35 40 45

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

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

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln His His Tyr Val Thr Pro Leu
85 90 95

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

<210> 8

<211> 324

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic polynucleotide

<400> 8

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ggcaagagcc ccaagctgct ggtgtacaac gccaagaccc tggccgaggg cgtgcccagc      180
aggttcagcg gcagcggcag cggcaccgac ttcaccctga ccatcagcag cctgcagccc      240
gaggacttcg ccacctacta ctgccagcac cactacgtga cccccctgac cttcggccag      300
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<210> 9

<211> 214

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic polypeptide

<400> 9

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Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1           5           10           15
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```
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Glu Asn Ile Tyr Ser Tyr
20           25           30
```

```
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ser Pro Lys Leu Leu Val
35           40           45
```

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

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

```
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln His His Tyr Val Thr Pro Leu
85           90           95
```

Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg Thr Val Ala Ala
100 105 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
115 120 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
130 135 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145 150 155 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
165 170 175

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

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

Phe Asn Arg Gly Glu Cys
210

<210> 10
<211> 642
<212> DNA
<213> Artificial Sequence

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ggcaagagcc ccaagctgct ggtgtacaac gccaagagccc tggccgaggg cgtgcccagc 180
aggttcagcg gcagcggcag cggcaccgac ttcaccctga ccatcagcag cctgcagccc 240
gaggacttcg ccacctacta ctgccagcac cactacgtga ccccctgac cttcggccag 300

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ggcaccaagc tggagatcaa gaggaccgtg gccgccccca gcgtgttcat cttccccccc 360
agcgacgagc agctgaagag cggcaccgcc agcgtggtgt gcctgctgaa caacttctac 420
cccagggagg ccaaggtgca gtggaagggtg gacaacgccc tgcagagcgg caacagccag 480
gagagcgtga ccgagcagga cagcaaggac agcacctaca gcctgagcag caccctgacc 540
ctgagcaagg ccgactacga gaagcacaag gtgtacgcct gcgaggtgac ccaccagggc 600
ctgagcagcc ccgtgaccaa gagcttcaac aggggcgagt gc 642

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<210> 11
<211> 108
<212> PRT
<213> Artificial Sequence

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<220>
<223> synthetic polypeptide

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<400> 11

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

```

```

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

```

```

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ser Pro Lys Leu Leu Val
35           40           45

```

```

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

```

```

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

```

```

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln His His Tyr Val Thr Pro Leu
85           90           95

```

```

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

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<210> 12
<211> 324
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic polynucleotide

<400> 12
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atcacctgca gggccagcga gaacatctac agctacctgg cctggtacca gcagaagccc 120
ggcaagagcc ccaagctgct ggtgtacaac gccaagaccc tggccgaggg cgtgcccagc 180
aggttcagcg gcagcggcag cggcaccgac ttcaccctga ccatcagcag cctgcagccc 240
gaggacttcg ccacctacta ctgccagcac cactacgtga cccccctgac cttcggccag 300
ggcaccaagc tggagatcaa gagg 324

<210> 13
<211> 214
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic polypeptide

<400> 13

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

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

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ser Pro Lys Leu Leu Val
35 40 45

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

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

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln His His Tyr Val Thr Pro Leu
85 90 95

Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg Thr Val Ala Ala
100 105 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
115 120 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
130 135 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145 150 155 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
165 170 175

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

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

Phe Asn Arg Gly Glu Cys
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<210> 14
<211> 642
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic polynucleotide

<400> 14
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60

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atcacctgca gggccagcga gaacatctac agctacctgg cctggtacca gcagaagccc 120
ggcaagagcc ccaagctgct ggtgtacaac gccaagaccc tggccgaggg cgtgcccagc 180
aggttcagcg gcagcggcag cggcaccgac ttcaccctga ccatcagcag cctgcagccc 240
gaggacttcg ccacctacta ctgccagcac cactacgtga cccccctgac cttcggccag 300
ggcaccaagc tggagatcaa gaggaccgtg gccgccccca gcgtgttcat cttccccccc 360
agcgacgagc agctgaagag cggcaccgcc agcgtggtgt gcctgctgaa caacttctac 420
cccagggagg ccaaggtgca gtggaagggtg gacaacgccc tgcagagcgg caacagccag 480
gagagcgtga ccgagcagga cagcaaggac agcacctaca gcctgagcag caccctgacc 540
ctgagcaagg ccgactacga gaagcacaag gtgtacgcct gcgaggtgac ccaccagggc 600
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<210> 15
<211> 108
<212> PRT
<213> Artificial Sequence

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<220>
<223> synthetic polypeptide

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<400> 15

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

```

```

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

```

```

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ser Pro Gln Leu Leu Val
          35           40           45

```

```

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

```

```

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

```

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln His His Tyr Val Thr Pro Leu
85 90 95

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

<210> 16
<211> 324
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic polynucleotide

<400> 16
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ggcaagagcc cccagctgct ggtgtacaac gccaaagaccc tggccgaggg cgtgcccagc 180
aggttcagcg gcagcggcag cggcaccacag ttcaccctga ccatcagcag cctgcagccc 240
gaggacttcg ccacctacta ctgccagcac cactacgtga cccccctgac cttcggccag 300
ggcaccaagc tggagatcaa gagg 324

<210> 17
<211> 214
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic polypeptide

<400> 17

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

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

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ser Pro Gln Leu Leu Val
35 40 45

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

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

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln His His Tyr Val Thr Pro Leu
85 90 95

Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg Thr Val Ala Ala
100 105 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
115 120 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
130 135 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145 150 155 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
165 170 175

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

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

Phe Asn Arg Gly Glu Cys
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<210> 18
<211> 642

<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic polynucleotide

<400> 18
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ggcaagagcc cccagctgct ggtgtacaac gccaagaccc tggccgaggg cgtgcccagc 180
aggttcagcg gcagcggcag cggcaccagc ttcaccctga ccatcagcag cctgcagccc 240
gaggacttcg ccacctacta ctgccagcac cactacgtga cccccctgac cttcggccag 300
ggcaccaagc tggagatcaa gaggaccgtg gccgccccca gcgtgttcat cttccccccc 360
agcgacgagc agctgaagag cggcaccgcc agcgtggtgt gcctgctgaa caacttctac 420
cccagggagg ccaaggtgca gtggaagggtg gacaacgccc tgcagagcgg caacagccag 480
gagagcgtga ccgagcagga cagcaaggac agcacctaca gcctgagcag caccctgacc 540
ctgagcaagg ccgactacga gaagcacaag gtgtacgcct gcgaggtgac ccaccagggc 600
ctgagcagcc ccgtgaccaa gagcttcaac aggggcgagt gc 642

<210> 19
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic polypeptide

<400> 19

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

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

Leu Ala Trp Tyr Gln Gln Lys Gln Gly Lys Ser Pro Gln Leu Leu Val
35 40 45

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

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

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln His His Tyr Val Thr Pro Leu
85 90 95

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

<210> 20
<211> 324
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic polynucleotide

<400> 20
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atcacctgca gggccagcga gaacatctac agctacctgg cctggtacca gcagaagcag 120
ggcaagagcc cccagctgct ggtgtacaac gccaagaccc tggccgaggg cgtgcccagc 180
aggttcagcg gcagcggcag cggcaccagcag ttaccctga agatcaacag cctgcagccc 240
gaggacttcg ccacctacta ctgccagcac cactacgtga cccccctgac cttcggccag 300
ggcaccaagc tggagatcaa gagg 324

<210> 21
<211> 214
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic polypeptide

<400> 21

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

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

Leu Ala Trp Tyr Gln Gln Lys Gln Gly Lys Ser Pro Gln Leu Leu Val
35 40 45

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

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

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln His His Tyr Val Thr Pro Leu
85 90 95

Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg Thr Val Ala Ala
100 105 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
115 120 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
130 135 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145 150 155 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
165 170 175

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

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

Phe Asn Arg Gly Glu Cys
210

<210> 22
<211> 642
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic polynucleotide

<400> 22
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atcacctgca gggccagcga gaacatctac agctacctgg cctggtacca gcagaagcag 120
ggcaagagcc cccagctgct ggtgtacaac gccaagaccc tggccgaggg cgtgcccagc 180
aggttcagcg gcagcggcag cggcacccag ttcaccctga agatcaacag cctgcagccc 240
gaggacttcg ccacctacta ctgccagcac cactacgtga cccccctgac cttcggccag 300
ggcaccaagc tggagatcaa gaggaccgtg gccgccccca gcgtgttcat cttccccccc 360
agcgacgagc agctgaagag cggcacccgcc agcgtggtgt gcctgctgaa caacttctac 420
cccagggagg ccaaggtgca gtggaagggtg gacaacgccc tgcagagcgg caacagccag 480
gagagcgtga ccgagcagga cagcaaggac agcacctaca gcctgagcag caccctgacc 540
ctgagcaagg ccgactacga gaagcacaag gtgtacgcct gcgaggtgac ccaccagggc 600
ctgagcagcc ccgtgaccaa gagcttcaac aggggcgagt gc 642

<210> 23
<211> 117
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic polypeptide

<400> 23

Glu Val Met Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ile Phe Ser Ser Tyr
20 25 30

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

Ala Thr Ile Ser Ser Gly Gly Ser Asn Thr Tyr Ser Pro Asp Thr Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80

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

Ala Arg Tyr Tyr Gly Tyr Tyr Phe Asp Phe Trp Gly Gln Gly Thr Leu
100 105 110

Leu Thr Val Ser Ser
115

<210> 24
<211> 351
<212> DNA
<213> Artificial Sequence

<220>
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<400> 24
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agctgcgccg ccagcggctt catcttcagc agctacgcca tgagctgggt gaggcaggcc 120
cccggcaccg gcctggagtg ggtggccacc atcagcagcg gcggcagcaa cacctacagc 180
cccgacaccg tgaagggcag gttcaccatc agcaggggaca acagcaagaa caccctgtac 240
ctgcagatga acagcctgag ggccgaggac accgccgtgt actactgcgc caggtactac 300
ggctactact tcgacttctg gggccagggc accctgctga ccgtgagcag c 351

<210> 25
<211> 447
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic polypeptide

<400> 25

Glu Val Met Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ile Phe Ser Ser Tyr
20 25 30

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

Ala Thr Ile Ser Ser Gly Gly Ser Asn Thr Tyr Ser Pro Asp Thr Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80

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

Ala Arg Tyr Tyr Gly Tyr Tyr Phe Asp Phe Trp Gly Gln Gly Thr Leu
100 105 110

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

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

Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser
145 150 155 160

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

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

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

Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His
210 215 220

Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val
225 230 235 240

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

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

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

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

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

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

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

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

Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn
 370 375 380

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

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

Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu
 420 425 430

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

<210> 26
 <211> 1341
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic polynucleotide

<400> 26
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 agctgcgccg ccagcggctt catcttcagc agctacgcca tgagctgggt gaggcaggcc 120
 cccggcaccg gcctggagtg ggtggccacc atcagcagcg gcggcagcaa cacctacagc 180
 cccgacaccg tgaagggcag gttcaccatc agcagggaca acagcaagaa caccctgtac 240
 ctgcagatga acagcctgag ggccgaggac accgccgtgt actactgcgc caggtactac 300
 ggctactact tcgacttctg gggccagggc accctgctga ccgtgagcag cgccagcacc 360
 aagggcccca gcgtgttccc cctggccccc agcagcaaga gcaccagcgg cggcaccgcc 420
 gccctgggct gcctggtgaa ggactacttc cccgagcccg tgaccgtgag ctggaacagc 480
 ggcgccctga ccagcggcgt gcacaccttc cccgccgtgc tgcagagcag cggcctgtac 540

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agcctgagca gcgtggtgac cgtgcccagc agcagcctgg gcacccagac ctacatctgc      600
aacgtgaacc acaagcccag caacaccaag gtggacaaga aggtggagcc caagagctgc      660
gacaagaccc acacctgccc cccctgcccc gcccccgagc tgctgggcgg cccagcgtg      720
ttcctgttcc cccccaagcc caaggacacc ctgatgatca gcaggacccc cgaggtgacc      780
tgcgtggtgg tggacgtgag ccacgaggac cccgaggtga agttcaactg gtacgtggac      840
ggcgtggagg tgcacaacgc caagaccaag cccagggagg agcagtacaa cagcacctac      900
agggtggtga gcgtgctgac cgtgctgcac caggactggc tgaacggcaa ggagtacaag      960
tgcaagggtga gcaacaaggc cctgcccgcc cccatcgaga agaccatcag caaggccaag     1020
ggccagccca gggagcccca ggtgtacacc ctgcccccca gcagggagga gatgaccaag     1080
aaccaggtga gcctgacctg cctggtgaag ggcttctacc ccagcgacat cgccgtggag     1140
tgggagagca acggccagcc cgagaacaac tacaagacca cccccccgt gctggacagc     1200
gacggcagct tcttcctgta cagcaagctg accgtggaca agagcaggtg gcagcagggc     1260
aacgtgttca gctgcagcgt gatgcacgag gccctgcaca accactacac ccagaagagc     1320
ctgagcctga gccccggcaa g                                           1341

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<210> 27
 <211> 117
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic polypeptide

<400> 27

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Glu Val Met Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1           5           10          15

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```

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ile Phe Ser Ser Tyr
20          25          30

```

```

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

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Ala Thr Ile Ser Ser Gly Gly Ser Asn Thr Tyr Ser Pro Asp Thr Val
 50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
 65 70 75 80

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

Ala Arg Tyr Tyr Gly Tyr Tyr Phe Asp Phe Trp Gly Gln Gly Thr Leu
 100 105 110

Leu Thr Val Ser Ser
 115

<210> 28
 <211> 351
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic polynucleotide

<400> 28
 gaggtgatgc tgggtggagag cggcggcggc ctggtgcagc ccggcggcag cctgaggctg 60
 agctgcgccg ccagcggcctt catcttcagc agctacgcca tgagctgggt gaggcaggcc 120
 cccggcaccg gcctggagtg ggtggccacc atcagcagcg gcggcagcaa cacctacagc 180
 cccgacaccg tgaagggcag gttcaccatc agcagggaca acagcaagaa caccctgtac 240
 ctgcagatga acagcctgag ggccgaggac accgccatgt actactgcgc caggtactac 300
 ggctactact tcgacttctg gggccagggc accctgctga ccgtgagcag c 351

<210> 29
 <211> 447
 <212> PRT
 <213> Artificial Sequence

<220>

<223> synthetic polypeptide

<400> 29

Glu Val Met Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ile Phe Ser Ser Tyr
20 25 30

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

Ala Thr Ile Ser Ser Gly Gly Ser Asn Thr Tyr Ser Pro Asp Thr Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80

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

Ala Arg Tyr Tyr Gly Tyr Tyr Phe Asp Phe Trp Gly Gln Gly Thr Leu
100 105 110

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

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

Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser
145 150 155 160

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

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

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

Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His
210 215 220

Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val
225 230 235 240

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

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

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

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

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

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

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

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

Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn
370 375 380

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

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

Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu
 420 425 430

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

<210> 30
 <211> 1341
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic polynucleotide

<400> 30
 gaggtgatgc tggtaggagag cggcggcggc ctggtgcagc ccggcggcag cctgaggctg 60
 agctgcgccg ccagcggcctt catcttcagc agctacgcc aagagctgggt gaggcaggcc 120
 cccggcaccg gcctggagtg ggtggccacc atcagcagcg gcggcagcaa cacctacagc 180
 cccgacaccg tgaagggcag gttcaccatc agcaggggaca acagcaagaa caccctgtac 240
 ctgcagatga acagcctgag ggccgaggac accgccatgt actactgcgc caggtactac 300
 ggctactact tcgacttctg gggccagggc accctgctga ccgtgagcag cgccagcacc 360
 aaggggccca gcgtgttccc cctggccccc agcagcaaga gcaccagcgg cggcaccgcc 420
 gccctgggct gcctggtgaa ggactacttc cccgagcccg tgaccgtgag ctggaacagc 480
 ggcgccctga ccagcggcgt gcacaccttc cccgccgtgc tgcagagcag cggcctgtac 540
 agcctgagca gcgtggtgac cgtgcccagc agcagcctgg gcaccagac ctacatctgc 600
 aacgtgaacc acaagcccag caacaccaag gtggacaaga aggtggagcc caagagctgc 660
 gacaagaccc acacctgccc cccctgcccc gcccccgagc tgctgggagg cccagcgtg 720
 ttctgttcc ccccaagcc caaggacacc ctgatgatca gcaggacccc cgaggtgacc 780

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

Ala Arg Tyr Tyr Gly Tyr Tyr Phe Asp Phe Trp Gly Gln Gly Thr Leu
100 105 110

Leu Thr Val Ser Ser
115

<210> 32
<211> 351
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic polynucleotide

<400> 32
gaggtgatgc tggaggagag cggcggcggc ctggtgcagc ccggcggcag cctgaggctg 60
agctgcgccg ccagcggctt catcttcagc agctacgcca tgagctgggt gaggcaggcc 120
cccgagacca ggctggagtg ggtggccacc atcagcagcg gcggcagcaa cacctacagc 180
cccgacaccg tgaagggcag gttcaccatc agcagggaca acagcaagaa caccctgtac 240
ctgcagatga acagcctgag ggccgaggac accgccatgt actactgcgc caggtactac 300
ggctactact tcgacttctg gggccagggc accctgctga ccgtgagcag c 351

<210> 33
<211> 447
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic polypeptide

<400> 33

Glu Val Met Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ile Phe Ser Ser Tyr
20 25 30

Ala Met Ser Trp Val Arg Gln Ala Pro Glu Thr Arg Leu Glu Trp Val
35 40 45

Ala Thr Ile Ser Ser Gly Gly Ser Asn Thr Tyr Ser Pro Asp Thr Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80

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

Ala Arg Tyr Tyr Gly Tyr Tyr Phe Asp Phe Trp Gly Gln Gly Thr Leu
100 105 110

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

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

Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser
145 150 155 160

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

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

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

Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His
210 215 220

Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val
 225 230 235 240

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

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

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

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

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

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

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

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

Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn
 370 375 380

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

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

Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu
420 425 430

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

<210> 34
<211> 1341
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic polynucleotide

<400> 34
gaggtgatgc tgggtggagag cggcggcggc ctggtgcagc ccggcggcag cctgaggctg 60
agctgcgccg ccagcggcctt catcttcagc agctacgcca tgagctgggt gaggcaggcc 120
cccgagacca ggctggagtg ggtggccacc atcagcagcg gcggcagcaa cacctacagc 180
cccgacaccg tgaagggcag gttcaccatc agcagggaca acagcaagaa caccctgtac 240
ctgcagatga acagcctgag ggccgaggac accgccatgt actactgcgc cagggtactac 300
ggctactact tcgacttctg gggccagggc accctgctga ccgtgagcag cgccagcacc 360
aaggggccca gcgtgttccc cctggccccc agcagcaaga gcaccagcgg cggcaccgcc 420
gccctgggct gcctggtgaa ggactacttc cccgagcccg tgaccgtgag ctggaacagc 480
ggcgccctga ccagcggcgt gcacaccttc cccgccgtgc tgcagagcag cggcctgtac 540
agcctgagca gcgtggtgac cgtgcccagc agcagcctgg gcaccagac ctacatctgc 600
aacgtgaacc acaagcccag caacaccaag gtggacaaga aggtggagcc caagagctgc 660
gacaagaccc acacctgccc cccctgcccc gcccccgagc tgctgggcgg cccagcgtg 720
ttcctgttcc cccccaagcc caaggacacc ctgatgatca gcaggacccc cgaggtgacc 780
tgcgtggtgg tggacgtgag ccacgaggac cccgagggtga agttcaactg gtacgtggac 840
ggcgtggagg tgcacaacgc caagaccaag cccagggagg agcagtacaa cagcacctac 900
agggtggtga gcgtgctgac cgtgctgcac caggactggc tgaacggcaa ggagtacaag 960
tgcaagggtga gcaacaaggc cctgcccgcc cccatcgaga agaccatcag caaggccaag 1020

ggccagccca gggagcccca ggtgtacacc ctgcccccca gcagggagga gatgaccaag 1080
aaccaggtga gcctgacctg cctggtgaag ggcttctacc ccagcgacat cgccgtggag 1140
tgggagagca acggccagcc cgagaacaac tacaagacca cccccccgt gctggacagc 1200
gacggcagct tcttcctgta cagcaagctg accgtggaca agagcaggtg gcagcagggc 1260
aacgtgttca gctgcagcgt gatgcacgag gccctgcaca accactacac ccagaagagc 1320
ctgagcctga gccccggcaa g 1341

<210> 35
<211> 441
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic polypeptide

<400> 35

Glu Val Met Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ile Phe Ser Ser Tyr
20 25 30

Ala Met Ser Trp Val Arg Gln Ala Pro Glu Thr Arg Leu Glu Trp Val
35 40 45

Ala Thr Ile Ser Ser Gly Gly Ser Asn Thr Tyr Ser Pro Asp Thr Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80

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

Ala Arg Tyr Tyr Gly Tyr Tyr Phe Asp Phe Trp Gly Gln Gly Thr Leu
100 105 110

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

Ala Pro Gly Ser Ala Ala Gln Thr Asn Ser Met Val Thr Leu Gly Cys
130 135 140

Leu Val Lys Gly Tyr Phe Pro Glu Pro Val Thr Val Thr Trp Asn Ser
145 150 155 160

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

Asp Leu Tyr Thr Leu Ser Ser Ser Val Thr Val Pro Ser Ser Thr Trp
180 185 190

Pro Ser Glu Thr Val Thr Cys Asn Val Ala His Pro Ala Ser Ser Thr
195 200 205

Lys Val Asp Lys Lys Ile Val Pro Arg Asp Cys Gly Cys Lys Pro Cys
210 215 220

Ile Cys Thr Val Pro Glu Val Ser Ser Val Phe Ile Phe Pro Pro Lys
225 230 235 240

Pro Lys Asp Val Leu Thr Ile Thr Leu Thr Pro Lys Val Thr Cys Val
245 250 255

Val Val Asp Ile Ser Lys Asp Asp Pro Glu Val Gln Phe Ser Trp Phe
260 265 270

Val Asp Asp Val Glu Val His Thr Ala Gln Thr Gln Pro Arg Glu Glu
275 280 285

Gln Phe Asn Ser Thr Phe Arg Ser Val Ser Glu Leu Pro Ile Met His
290 295 300

Gln Asp Trp Leu Asn Gly Lys Glu Phe Lys Cys Arg Val Asn Ser Ala
 305 310 315 320

Ala Phe Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Arg
 325 330 335

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

Ala Lys Asp Lys Val Ser Leu Thr Cys Met Ile Thr Asp Phe Phe Pro
 355 360 365

Glu Asp Ile Thr Val Glu Trp Gln Trp Asn Gly Gln Pro Ala Glu Asn
 370 375 380

Tyr Lys Asn Thr Gln Pro Ile Met Asp Thr Asp Gly Ser Tyr Phe Val
 385 390 395 400

Tyr Ser Lys Leu Asn Val Gln Lys Ser Asn Trp Glu Ala Gly Asn Thr
 405 410 415

Phe Thr Cys Ser Val Leu His Glu Gly Leu His Asn His His Thr Glu
 420 425 430

Lys Ser Leu Ser His Ser Pro Gly Lys
 435 440

<210> 36
 <211> 1323
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic polynucleotide

<400> 36
 gaggtgatgc tgggtggagag cggcggcggc ctggtgcagc ccggcggcag cctgaggctg 60
 agctgcgccg ccagcggcctt catcttcagc agctacgcca tgagctgggt gaggcaggcc 120
 cccgagacca ggctggagtg ggtggccacc atcagcagcg gcggcagcaa cacctacagc 180

cccgacaccg tgaagggcag gttcaccatc agcagggaca acagcaagaa caccctgtac	240
ctgcagatga acagcctgag ggccgaggac accgccatgt actactgcgc caggtactac	300
ggctactact tcgacttctg gggccagggc accctgctga ccgtgagcag cgccaagacc	360
acccccccca gcgtgtaccc cctggccccc ggcagcgccg cccagaccaa cagcatgggtg	420
accctgggct gcctgggtgaa gggctacttc cccgagcccc tgaccgtgac ctggaacagc	480
ggcagcctga gcagcggcgt gcacaccttc cccgccgtgc tgcagagcga cctgtacacc	540
ctgagcagca gcgtgaccgt gcccagcagc acctggccca gcgagaccgt gacctgcaac	600
gtggcccacc ccgccagcag caccaagggtg gacaagaaga tcgtgcccag ggactgcggc	660
tgcaagccct gcatctgcac cgtgcccagag gtgagcagcg tgttcattctt ccccccaag	720
cccaaggacg tgctgaccat caccctgacc cccaagggtga cctgcgtgggt ggtggacatc	780
agcaaggacg accccgaggt gcagttcagc tggttcgtgg acgacgtgga ggtgcacacc	840
gcccagaccc agcccaggga ggagcagttc aacagcacct tcaggagcgt gagcgagctg	900
cccatcatgc accaggactg gctgaacggc aaggagttca agtgcagggt gaacagcgcc	960
gccttccccg ccccatcga gaagaccatc agcaagacca agggcaggcc caaggcccc	1020
caggtgtaca ccatcccc cccaaggag cagatggcca aggacaagggt gaggctgacc	1080
tgcatgatca ccgacttctt ccccgaggac atcaccgtgg agtggcagtg gaacggccag	1140
cccgccgaga actacaagaa ccccagccc atcatggaca ccgacggcag ctacttcgtg	1200
tacagcaagc tgaacgtgca gaagagcaac tgggaggccg gcaacacctt cacctgcagc	1260
gtgctgcacg agggcctgca caaccaccac accgagaaga gcctgagcca cagccccggc	1320
aag	1323

<210> 37
 <211> 214
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> synthetic polypeptide

<400> 37

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

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

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ser Pro Lys Leu Leu Val
35 40 45

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

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

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln His His Tyr Val Thr Pro Leu
85 90 95

Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg Ala Asp Ala Ala
100 105 110

Pro Thr Val Ser Ile Phe Pro Pro Ser Ser Glu Gln Leu Thr Ser Gly
115 120 125

Gly Ala Ser Val Val Cys Phe Leu Asn Asn Phe Tyr Pro Lys Asp Ile
130 135 140

Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg Gln Asn Gly Val Leu
145 150 155 160

Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser Thr Tyr Ser Met Ser
165 170 175

Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu Arg His Asn Ser Tyr
180 185 190

Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser Pro Ile Val Lys Ser
 195 200 205

Phe Asn Arg Asn Glu Cys
 210

<210> 38
 <211> 642
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic nucleotide

<400> 38
 gacatccaca tgacccagag ccccagcagc ctgagcgcca gcgtgggcga cagggtgacc 60
 atcacctgca gggccagcga gaacatctac agctacctgg cctgggtacca gcagaagccc 120
 ggcaagagcc ccaagctgct ggtgtacaac gccaaagacc tggccgaggg cgtgcccagc 180
 aggttcagcg gcagcggcag cggcaccgac ttcaccctga ccatcagcag cctgcagccc 240
 gaggacttcg ccacctacta ctgccagcac cactacgtga cccccctgac cttcggccag 300
 ggaccaagc tggagatcaa gagggccgac gccgccccca ccgtgagcat cttccccccc 360
 agcagcgagc agctgaccag cggcggcgcc agcgtgggtg gcttcctgaa caacttctac 420
 cccaaggaca tcaacgtgaa gtggaagatc gacggcagcg agaggcagaa cggcgtgctg 480
 aacagctgga ccgaccagga cagcaaggac agcacctaca gcatgagcag caccctgacc 540
 ctgaccaagg acgagtacga gaggcacaac agctacacct gcgaggccac ccacaagacc 600
 agcaccagcc ccatcgtgaa gagcttcaac aggaacgagt gc 642

<210> 39
 <211> 214
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic polypeptide

<400> 39

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

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

Leu Ala Trp Tyr Gln Gln Lys Gln Gly Lys Ser Pro Gln Leu Leu Val
35 40 45

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

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

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln His His Tyr Val Thr Pro Leu
85 90 95

Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg Ala Asp Ala Ala
100 105 110

Pro Thr Val Ser Ile Phe Pro Pro Ser Ser Glu Gln Leu Thr Ser Gly
115 120 125

Gly Ala Ser Val Val Cys Phe Leu Asn Asn Phe Tyr Pro Lys Asp Ile
130 135 140

Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg Gln Asn Gly Val Leu
145 150 155 160

Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser Thr Tyr Ser Met Ser
165 170 175

Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu Arg His Asn Ser Tyr
180 185 190

Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser Pro Ile Val Lys Ser
195 200 205

Phe Asn Arg Asn Glu Cys
210

<210> 40
<211> 642
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic polynucleotide

<400> 40
gacatccaca tgacccagag ccccagcagc ctgagcgcca gcgtgggcga cagggtgacc 60
atcacctgca gggccagcga gaacatctac agctacctgg cctggtacca gcagaagcag 120
ggcaagagcc cccagctgct ggtgtacaac gccaagaccc tggccgaggg cgtgcccagc 180
aggttcagcg gcagcggcag cggcacccag ttcaccctga agatcaacag cctgcagccc 240
gaggacttcg ccacctacta ctgccagcac cactacgtga cccccctgac cttcggccag 300
ggcaccaagc tggagatcaa gaggaccgtg gccgccccca gcgtgttcat cttccccccc 360
agcgacgagc agctgaagag cggcacccgcc agcgtggtgt gcctgctgaa caacttctac 420
cccagggagg ccaaggtgca gtggaagggtg gacaacgccc tgcagagcgg caacagccag 480
gagagcgtga ccgagcagga cagcaaggac agcacctaca gcctgagcag caccctgacc 540
ctgagcaagg ccgactacga gaagcacaag gtgtacgcct gcgaggtgac ccaccagggc 600
ctgagcagcc ccgtgaccaa gagcttcaac aggggcgagt gc 642

<210> 41
<211> 214
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic polypeptide

<400> 41

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

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

Leu Ala Trp Tyr Gln Gln Lys Gln Gly Lys Ser Pro Gln Leu Leu Val
35 40 45

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

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

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

Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys Arg Ala Asp Ala Ala
100 105 110

Pro Thr Val Ser Ile Phe Pro Pro Ser Ser Glu Gln Leu Thr Ser Gly
115 120 125

Gly Ala Ser Val Val Cys Phe Leu Asn Asn Phe Tyr Pro Lys Asp Ile
130 135 140

Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg Gln Asn Gly Val Leu
145 150 155 160

Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser Thr Tyr Ser Met Ser
165 170 175

Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu Arg His Asn Ser Tyr
180 185 190

Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser Pro Ile Val Lys Ser
195 200 205

Phe Asn Arg Asn Glu Cys
210

<210> 42
<211> 642
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic polynucleotide

<400> 42
gacatccaca tgactcagtc tccagcctcc ctatctgcat ctgtgggaga aactgtcacc 60
atcacatgtc gagcaagtga gaatatTTac agttatttag catggatatca gcagaaacag 120
ggaaaaatctc ctcagctcct ggtctataat gcaaaaaacct tagcagaagg tgtgccatca 180
aggttcagtg gcagtggatc aggcacacag ttttctctga agatcaacag cctgcagcct 240
gaagatTTtg ggagttatta ctgtcaacat cattatgtta ctccgctcac gttcgggtgct 300
gggaccaagc tggagctgaa acgggctgat gctgcaccaa ctgtatccat cttcccacca 360
tccagtgagc agttaacatc tggaggtgcc tcagtcgtgt gcttcttgaa caacttctac 420
cccaaagaca tcaatgtcaa gtggaagatt gatggcagtg aacgacaaaa tggcgtcctg 480
aacagttgga ctgatcagga cagcaaagac agcacctaca gcatgagcag caccctcacg 540
ttgaccaagg acgagtatga acgacataac agctatacct gtgaggccac tcacaagaca 600
tcaacttcac ccattgtcaa gagcttcaac aggaatgagt gt 642

<210> 43
<211> 441
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic polypeptide

<400> 43

Glu Val Met Leu Val Glu Ser Gly Gly Gly Leu Val Lys Pro Gly Gly
1 5 10 15

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Ile Phe Ser Ser Tyr
20 25 30

Ala Met Ser Trp Val Arg Gln Ser Pro Glu Thr Arg Leu Glu Trp Val
35 40 45

Ala Thr Ile Ser Ser Gly Gly Ser Asn Thr Tyr Ser Pro Asp Ser Val
50 55 60

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

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

Ala Arg Tyr Tyr Gly Tyr Tyr Phe Asp Phe Trp Gly Gln Gly Thr Thr
100 105 110

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

Ala Pro Gly Ser Ala Ala Gln Thr Asn Ser Met Val Thr Leu Gly Cys
130 135 140

Leu Val Lys Gly Tyr Phe Pro Glu Pro Val Thr Val Thr Trp Asn Ser
145 150 155 160

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

Asp Leu Tyr Thr Leu Ser Ser Ser Val Thr Val Pro Ser Ser Thr Trp
180 185 190

Pro Ser Glu Thr Val Thr Cys Asn Val Ala His Pro Ala Ser Ser Thr
195 200 205

Lys Val Asp Lys Lys Ile Val Pro Arg Asp Cys Gly Cys Lys Pro Cys
210 215 220

Ile Cys Thr Val Pro Glu Val Ser Ser Val Phe Ile Phe Pro Pro Lys
 225 230 235 240

Pro Lys Asp Val Leu Thr Ile Thr Leu Thr Pro Lys Val Thr Cys Val
 245 250 255

Val Val Asp Ile Ser Lys Asp Asp Pro Glu Val Gln Phe Ser Trp Phe
 260 265 270

Val Asp Asp Val Glu Val His Thr Ala Gln Thr Gln Pro Arg Glu Glu
 275 280 285

Gln Phe Asn Ser Thr Phe Arg Ser Val Ser Glu Leu Pro Ile Met His
 290 295 300

Gln Asp Trp Leu Asn Gly Lys Glu Phe Lys Cys Arg Val Asn Ser Ala
 305 310 315 320

Ala Phe Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Arg
 325 330 335

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

Ala Lys Asp Lys Val Ser Leu Thr Cys Met Ile Thr Asp Phe Phe Pro
 355 360 365

Glu Asp Ile Thr Val Glu Trp Gln Trp Asn Gly Gln Pro Ala Glu Asn
 370 375 380

Tyr Lys Asn Thr Gln Pro Ile Met Asp Thr Asp Gly Ser Tyr Phe Val
 385 390 395 400

Tyr Ser Lys Leu Asn Val Gln Lys Ser Asn Trp Glu Ala Gly Asn Thr
 405 410 415

Phe Thr Cys Ser Val Leu His Glu Gly Leu His Asn His His Thr Glu
 420 425 430

Lys Ser Leu Ser His Ser Pro Gly Lys
 435 440

<210> 44
 <211> 1323
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic polynucleotide

<400> 44
 gaagtgatgc tgggtggagtc tggggggaggc ttagtgaagc ctggagggtc cctgaaactc 60
 tcctgtgcag cctctggatt cattttcagt agttatgcca tgtcttgggt tcgccagagt 120
 ccggagacga ggctggagtg ggtcgcaacc attagtagtg gtggtagtaa cacctactct 180
 ccagacagtg tgaaggggcg attcaccatc tccagagaca atgccaagaa caccctgtac 240
 ctgcaaatga gcagtctgag gtctgaggac acggccatgt attactgtgc aagatattat 300
 ggttactact ttgacttctg gggccaaggc accactctca cagtctcctc agccaaaacg 360
 acacccccat ctgtctatcc actggcccct ggatctgctg cccaaactaa ctccatggtg 420
 accctgggat gcctggtcaa gggctatttc cctgagccag tgacagtgc ctggaactct 480
 ggatccctgt ccagcgggtgt gcacaccttc ccagctgtcc tgcagtctga cctctacact 540
 ctgagcagct cagtgactgt cccctccagc acctggcca gcgagaccgt cacctgcaac 600
 gttgcccacc cggccagcag caccaagggt gacaagaaaa ttgtgcccag ggattgtggt 660
 tgtaagcctt gcatatgtac agtcccagaa gtatcatctg tcttcatctt cccccaaaag 720
 cccaaggatg tgctcaccat tactctgact cctaagggtca cgtgtgttgt ggtagacatc 780
 agcaaggatg atcccagggt ccagttcagc tggttttag atgatgtgga ggtgcacaca 840
 gctcagacgc aaccccggga ggagcagttc aacagcactt tccgctcagt cagtgaactt 900
 cccatcatgc accaggactg gctcaatggc aaggagttca aatgcagggt caacagtgc 960
 gctttccctg ccccatcga gaaaaccatc tccaaaacca aaggcagacc gaaggctcca 1020

caggtgtaca ccattccacc tcccaaggag cagatggcca aggataaagt cagtctgacc	1080
tgcatagataa cagacttctt ccctgaagac attactgtgg agtggcagtg gaatgggcag	1140
ccagcggaga actacaagaa cactcagccc atcatggaca cagatggctc ttacttcgtc	1200
tacagcaagc tcaatgtgca gaagagcaac tgggaggcag gaaatacttt cacctgctct	1260
gtgttacatg agggcctgca caaccacat actgagaaga gcctctccca ctctcctggt	1320
aaa	1323

<210> 45
 <211> 17
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic polypeptide

<400> 45

Thr	Ile	Ser	Ser	Gly	Gly	Ser	Asn	Thr	Tyr	Ser	Pro	Asp	Ser	Val	Lys
1				5					10					15	

Gly

<210> 46
 <211> 108
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic polypeptide

<400> 46

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

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

Leu Ala Trp Tyr Gln Gln Lys Gln Gly Lys Ser Pro Gln Leu Leu Val
 35 40 45

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

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

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

Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys Arg
 100 105

<210> 47
 <211> 324
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic polynucleotide

<400> 47
 gacatccaca tgactcagtc tccagcctcc ctatctgcat ctgtgggaga aactgtcacc 60
 atcacatgtc gagcaagtga gaatatctac agttatttag catggtatca gcagaaacag 120
 ggaaaatctc ctcagctcct gtctataatg caaaaacctt agcagaaggt gtgccatcaa 180
 ggttcagtgg cagtggatca ggcacacatt ttctctgaag atcaacagcc tgcagcctga 240
 agattttggg agttattact gtcaacatca ttatgttact ccgctcacgt tcggtgctgg 300
 gaccaagctg gagctgaaac gggc 324

<210> 48
 <211> 117
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic polypeptide

<400> 48

Glu Val Met Leu Val Glu Ser Gly Gly Gly Leu Val Lys Pro Gly Gly
1 5 10 15

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Ile Phe Ser Ser Tyr
20 25 30

Ala Met Ser Trp Val Arg Gln Ser Pro Glu Thr Arg Leu Glu Trp Val
35 40 45

Ala Thr Ile Ser Ser Gly Gly Ser Asn Thr Tyr Ser Pro Asp Ser Val
50 55 60

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

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

Ala Arg Tyr Tyr Gly Tyr Tyr Phe Asp Phe Trp Gly Gln Gly Thr Thr
100 105 110

Leu Thr Val Ser Ser
115

<210> 49

<211> 351

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic polynucleotide

<400> 49

gaagtgatgc tgggtggagtc tggggggaggc ttagtgaagc ctggagggtc cctgaaactc 60

tcctgtgcag cctctggatt cattttcagt agttatgcc a tgtcttgggt tcgccagagt 120

ccggagacga ggctggagtg ggtcgcaacc attagtagtg gtggtagtaa cacctactct 180

ccagacagtg tgaaggggcg attcaccatc tccagagaca atgccaagaa caccctgtac 240

ctgcaaatga gcagtctgag gtctgaggac acggccatgt attactgtgc aagatattat 300
 gggtactact ttgacttctg gggccaaggc accactctca cagtctcctc a 351

<210> 50
 <211> 214
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic polypeptide

<400> 50

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

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

Leu Ala Trp Tyr Gln Gln Lys Gln Gly Lys Ser Pro Gln Leu Leu Val
 35 40 45

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

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

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

Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys Arg Thr Val Ala Ala
 100 105 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
 115 120 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
 130 135 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
 145 150 155 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
 165 170 175

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

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

Phe Asn Arg Gly Glu Cys
 210

<210> 51
 <211> 642
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic polynucleotide

<400> 51
 gacatccaca tgacccagag ccccgccagc ctgagcgcca gcgtgggcga gaccgtgacc 60
 atcacctgca gggccagcga gaacatctac agctacctgg cctggtacca gcagaagcag 120
 ggcaagagcc cccagctgct ggtgtacaac gccaagaccc tggccgaggg cgtgcccagc 180
 aggttcagcg gcagcggcag cggcaccagc ttgagcctga agatcaacag cctgcagccc 240
 gaggacttcg gcagctacta ctgccagcac cactacgtga cccccctgac cttcggcgcc 300
 ggcaccaagc tggagctgaa gaggaccgtg gccgccccca gcgtgttcat cttccccccc 360
 agcgacgagc agctgaagag cggcaccgcc agcgtggtgt gcctgctgaa caacttctac 420
 cccagggagg ccaaggtgca gtggaagggtg gacaacgccc tgcagagcgg caacagccag 480
 gagagcgtga ccgagcagga cagcaaggac agcacctaca gcctgagcag caccctgacc 540
 ctgagcaagg ccgactacga gaagcacaag gtgtacgcct gcgaggtgac ccaccagggc 600

ctgagcagcc ccgtgaccaa gagcttcaac aggggcgagt gc

642

<210> 52
<211> 447
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic polypeptide

<400> 52

Glu Val Met Leu Val Glu Ser Gly Gly Gly Leu Val Lys Pro Gly Gly
1 5 10 15

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Ile Phe Ser Ser Tyr
20 25 30

Ala Met Ser Trp Val Arg Gln Ser Pro Glu Thr Arg Leu Glu Trp Val
35 40 45

Ala Thr Ile Ser Ser Gly Gly Ser Asn Thr Tyr Ser Pro Asp Ser Val
50 55 60

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

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

Ala Arg Tyr Tyr Gly Tyr Tyr Phe Asp Phe Trp Gly Gln Gly Thr Thr
100 105 110

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

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

Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser
 145 150 155 160

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

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

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

Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His
 210 215 220

Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val
 225 230 235 240

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

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

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

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

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

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

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

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

Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn
370 375 380

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

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

Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu
420 425 430

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

<210> 53
<211> 1341
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic polypeptide

<400> 53
gaggtgatgc tgggtggagag cggcggcggc ctggtgaagc ccggcggcag cctgaagctg 60
agctgcgccg ccagcggctt catcttcagc agctacgcca tgagctgggt gaggcagagc 120
cccgagacca ggctggagtg ggtggccacc atcagcagcg gcggcagcaa cacctacagc 180
cccgacagcg tgaagggcag gttcaccatc agcagggaca acgccaagaa caccctgtac 240
ctgcagatga gcagcctgag gagcgaggac accgccatgt actactgcgc caggtactac 300
ggctactact tcgacttctg gggccagggc accaccctga ccgtgagcag cgccagcacc 360
aagggcccca gcgtgttccc cctggccccc agcagcaaga gcaccagcgg cggcaccgcc 420
gccctgggct gcctggtgaa ggactacttc ccgagcccg tgaccgtgag ctggaacagc 480

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ggcgccctga ccagcggcgt gcacaccttc cccgccgtgc tgcagagcag cggcctgtac      540
agcctgagca gcgtggtgac cgtgcccagc agcagcctgg gcacccagac ctacatctgc      600
aacgtgaacc acaagcccag caacaccaag gtggacaaga aggtggagcc caagagctgc      660
gacaagaccc acacctgccc cccctgcccc gcccccgagc tgctgggcgg cccagcgtg      720
ttcctgttcc cccccaagcc caaggacacc ctgatgatca gcaggacccc cgaggtgacc      780
tgcgtggtgg tggacgtgag ccacgaggac cccgaggtga agttcaactg gtacgtggac      840
ggcgtggagg tgcacaacgc caagaccaag cccagggagg agcagtacaa cagcacctac      900
agggtggtga gcgtgctgac cgtgctgcac caggactggc tgaacggcaa ggagtacaag      960
tgcaaggtga gcaacaaggc cctgcccgcc cccatcgaga agaccatcag caaggccaag     1020
ggccagccca gggagcccca ggtgtacacc ctgcccccca gcaggaggga gatgaccaag     1080
aaccaggtga gcctgacctg cctggtgaag ggcttctacc ccagcgacat cgccgtggag     1140
tgggagagca acggccagcc cgagaacaac tacaagacca cccccccgt gctggacagc     1200
gacggcagct tcttcctgta cagcaagctg accgtggaca agagcaggtg gcagcagggc     1260
aacgtgttca gctgcagcgt gatgcacgag gccctgcaca accactacac ccagaagagc     1320
ctgagcctga gccccggcaa g                                             1341

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<210> 54
<211> 214
<212> PRT
<213> Artificial Sequence

```

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<220>
<223> synthetic polypeptide

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<400> 54

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```

Asp Ile Val Met Thr Gln Ser His Lys Phe Met Ser Thr Ser Val Gly
1           5           10           15

```

```

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

```

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

Tyr Trp Ala Ser Phe Arg His Thr Gly Val Pro Asp Arg Phe Thr Gly
50 55 60

Ser Gly Ser Gly Thr Glu Tyr Thr Leu Thr Ile Ser Arg Val Gln Ala
65 70 75 80

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

Thr Phe Gly Gly Gly Thr Arg Leu Glu Ile Lys Arg Ala Asp Ala Ala
100 105 110

Pro Thr Val Ser Ile Phe Pro Pro Ser Ser Glu Gln Leu Thr Ser Gly
115 120 125

Gly Ala Ser Val Val Cys Phe Leu Asn Asn Phe Tyr Pro Lys Asp Ile
130 135 140

Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg Gln Asn Gly Val Leu
145 150 155 160

Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser Thr Tyr Ser Met Ser
165 170 175

Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu Arg His Asn Ser Tyr
180 185 190

Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser Pro Ile Val Lys Ser
195 200 205

Phe Asn Arg Asn Glu Cys
210

<210> 55
<211> 642

<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic polynucleotide

<400> 55
gacatcgtga tgacccagtc ccacaagttc atgagcacca gcgtgggcga tcgggtgtcc 60
atcacctgta aggcctccca ggacgtgagc aacgccgtgg cctggatatca gcagaagcct 120
ggccagtccc ctcggctgct gatctattgg gcttccttca ggcacaccgg cgtgcccgat 180
cggttcaccg gctccggatc cggcaccgag tataccctga ccatctcccg ggtgcaggcc 240
gaggatctgg ctctgtatta ttgtcagcag cactacaata cccctacac cttcggcggc 300
ggcaccaggc tggagatcaa gagagctgat gctgccccca ccgtgagcat cttccctccc 360
tccagcgagc agctgacctc cggcggagcc tccgtggtgt gcttcctgaa caacttctac 420
cccaaggata tcaacgtgaa gtggaagatc gacggcagcg agcggcagaa tggcgtgctg 480
aactcctgga ccgaccagga cagcaaggac tccacctatt ccatgtcctc caccctgacc 540
ctgaccaagg atgagtacga gcggcacaac agctatacct gtgaggccac ccacaagacc 600
tccacctccc ccatcgtgaa gtccttcaat aggaatgagt gc 642

<210> 56
<211> 444
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic polypeptide

<400> 56

Glu Val Met Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Arg Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
20 25 30

Pro Met Phe Trp Val Arg Gln Thr Pro Glu Lys Arg Met Glu Trp Val
35 40 45

Ala Tyr Ile Ser Asn Gly Gly Asp Ser Thr Tyr Tyr Pro Asp Thr Val
50 55 60

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

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

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

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

Tyr Pro Leu Ala Pro Gly Ser Ala Ala Gln Thr Asn Ser Met Val Thr
130 135 140

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

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

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

Ser Thr Trp Pro Ser Glu Thr Val Thr Cys Asn Val Ala His Pro Ala
195 200 205

Ser Ser Thr Lys Val Asp Lys Lys Ile Val Pro Arg Asp Cys Gly Cys
210 215 220

Lys Pro Cys Ile Cys Thr Val Pro Glu Val Ser Ser Val Phe Ile Phe
225 230 235 240

Pro Pro Lys Pro Lys Asp Val Leu Thr Ile Thr Leu Thr Pro Lys Val
245 250 255

Thr Cys Val Val Val Asp Ile Ser Lys Asp Asp Pro Glu Val Gln Phe
260 265 270

Ser Trp Phe Val Asp Asp Val Glu Val His Thr Ala Gln Thr Gln Pro
275 280 285

Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Ser Val Ser Glu Leu Pro
290 295 300

Ile Met His Gln Asp Trp Leu Asn Gly Lys Glu Phe Lys Cys Arg Val
305 310 315 320

Asn Ser Ala Ala Phe Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr
325 330 335

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

Glu Gln Met Ala Lys Asp Lys Val Ser Leu Thr Cys Met Ile Thr Asp
355 360 365

Phe Phe Pro Glu Asp Ile Thr Val Glu Trp Gln Trp Asn Gly Gln Pro
370 375 380

Ala Glu Asn Tyr Lys Asn Thr Gln Pro Ile Met Asp Thr Asp Gly Ser
385 390 395 400

Tyr Phe Val Tyr Ser Lys Leu Asn Val Gln Lys Ser Asn Trp Glu Ala
405 410 415

Gly Asn Thr Phe Thr Cys Ser Val Leu His Glu Gly Leu His Asn His
420 425 430

His Thr Glu Lys Ser Leu Ser His Ser Pro Gly Lys
435 440

<210> 57
 <211> 1332
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic polynucleotide

<400> 57
 gaggtgatgc tgggtggagag cggcggcggc ctggtgcagc ccggcggcag caggaggctg 60
 agctgcgccg ccagcggctt caccttcagc agctacccca tgttctgggt gaggcagacc 120
 cccgagaaga ggatggagtg ggtggcctac atcagcaacg gcggcgacag cacctactac 180
 cccgacaccg tgaagggcag gttcaccgtg agcagggaca acgccaagaa caccctgtac 240
 ctgcagatga gcagcctgaa gagcgtggac accgccatct actactgcgt gaggcccagc 300
 gccaggtagc acgagtgggt cgcctactgg ggccagggca ccctggtgac cgtgagcagc 360
 gccaagacca cccccccag cgtgtacccc ctggcccccg gcagcgccgc ccagaccaac 420
 agcatgggtga ccctgggctg cctgggtgaag ggctacttcc ccgagcccgt gaccgtgacc 480
 tggaacagcg gcagcctgag cagcggcgtg cacaccttcc ccgccgtgct gcagagcgac 540
 ctgtacaccc tgagcagcag cgtgaccgtg cccagcagca cctggcccag cgagaccgtg 600
 acctgcaacg tggcccaccc cgccagcagc accaagggtg acaagaagat cgtgcccagg 660
 gactgcggct gcaagccctg catctgcacc gtgcccaggg tgagcagcgt gttcatcttc 720
 ccccccaagc ccaaggacgt gctgaccatc accctgaccc ccaaggtagc ctgcgtgggtg 780
 gtggacatca gcaaggacga ccccgagggt cagttcagct ggttcgtgga cgacgtggag 840
 gtgcacaccg cccagaccca gcccagggag gagcagttca acagcacctt caggagcgtg 900
 agcgagctgc ccatcatgca ccaggactgg ctgaacggca aggagttcaa gtgcagggtg 960
 aacagcgccg ctttccccgc ccccatcgag aagaccatca gcaagaccaa gggcaggccc 1020
 aaggcccccc aggtgtacac catccccccc cccaaggagc agatggccaa ggacaagggtg 1080
 agcctgacct gcatgatcac cgacttcttc cccgaggaca tcaccgtgga gtggcagtgg 1140
 aacggccagc ccgccgagaa ctacaagaac acccagccca tcatggacac cgacggcagc 1200

tacttcgtgt acagcaagct gaacgtgcag aagagcaact gggaggccgg caacaccttc	1260
acctgcagcg tgctgcacga gggcctgcac aaccaccaca ccgagaagag cctgagccac	1320
agccccggca ag	1332

<210> 58
 <211> 202
 <212> PRT
 <213> Homo sapiens

<400> 58

Met	Lys	Val	Leu	Ala	Ala	Gly	Val	Val	Pro	Leu	Leu	Leu	Val	Leu	His
1			5						10					15	

Trp	Lys	His	Gly	Ala	Gly	Ser	Pro	Leu	Pro	Ile	Thr	Pro	Val	Asn	Ala
			20					25					30		

Thr	Cys	Ala	Ile	Arg	His	Pro	Cys	His	Asn	Asn	Leu	Met	Asn	Gln	Ile
		35					40					45			

Arg	Ser	Gln	Leu	Ala	Gln	Leu	Asn	Gly	Ser	Ala	Asn	Ala	Leu	Phe	Ile
	50					55					60				

Leu	Tyr	Tyr	Thr	Ala	Gln	Gly	Glu	Pro	Phe	Pro	Asn	Asn	Leu	Asp	Lys
65					70					75					80

Leu	Cys	Gly	Pro	Asn	Val	Thr	Asp	Phe	Pro	Pro	Phe	His	Ala	Asn	Gly
				85					90					95	

Thr	Glu	Lys	Ala	Lys	Leu	Val	Glu	Leu	Tyr	Arg	Ile	Val	Val	Tyr	Leu
			100					105					110		

Gly	Thr	Ser	Leu	Gly	Asn	Ile	Thr	Arg	Asp	Gln	Lys	Ile	Leu	Asn	Pro
		115						120				125			

Ser	Ala	Leu	Ser	Leu	His	Ser	Lys	Leu	Asn	Ala	Thr	Ala	Asp	Ile	Leu
	130						135					140			

Arg Gly Leu Leu Ser Asn Val Leu Cys Arg Leu Cys Ser Lys Tyr His
 145 150 155 160

Val Gly His Val Asp Val Thr Tyr Gly Pro Asp Thr Ser Gly Lys Asp
 165 170 175

Val Phe Gln Lys Lys Lys Leu Gly Cys Gln Leu Leu Gly Lys Tyr Lys
 180 185 190

Gln Ile Ile Ala Val Leu Ala Gln Ala Phe
 195 200

<210> 59
 <211> 202
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic polypeptide

<400> 59

Met Lys Val Leu Ala Ala Gly Val Val Pro Leu Leu Leu Val Leu His
 1 5 10 15

Trp Lys His Gly Ala Gly Ser Pro Leu Pro Ile Thr Pro Val Asn Ala
 20 25 30

Thr Cys Ala Ile Arg His Pro Cys His Asn Asn Leu Met Asn Gln Ile
 35 40 45

Arg Ser Gln Leu Ala Gln Leu Asn Gly Ser Ala Asn Ala Leu Phe Ile
 50 55 60

Leu Tyr Tyr Thr Ala Gln Gly Glu Pro Phe Pro Asn Asn Leu Asp Lys
 65 70 75 80

Leu Cys Gly Pro Asn Val Thr Asp Phe Pro Pro Phe His Ala Asn Gly
 85 90 95

Thr Glu Lys Ala Lys Leu Val Glu Leu Tyr Arg Ile Val Val Tyr Leu
100 105 110

Gly Thr Ser Leu Gly Asn Ile Thr Arg Asp Gln Lys Ile Leu Asn Pro
115 120 125

Ser Ala Leu Ser Leu His Ser Lys Leu Asn Ala Thr Ala Asp Ile Leu
130 135 140

Arg Gly Leu Leu Ser Asn Val Leu Cys Arg Leu Cys Ser Lys Tyr His
145 150 155 160

Val Gly His Val Asp Val Thr Tyr Gly Pro Asp Thr Ser Gly Lys Asp
165 170 175

Val Phe Gln Lys Lys Lys Leu Gly Cys Gln Leu Leu Gly Thr Tyr Lys
180 185 190

Gln Val Ile Ser Val Val Val Gln Ala Phe
195 200

<210> 60

<211> 202

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic polypeptide

<400> 60

Met Lys Val Leu Ala Ala Gly Val Val Pro Leu Leu Leu Val Leu His
1 5 10 15

Trp Lys His Gly Ala Gly Ser Pro Leu Pro Ile Thr Pro Val Asn Ala
20 25 30

Thr Cys Ala Ile Arg His Pro Cys His Asn Asn Leu Met Asn Gln Ile
35 40 45

Arg Ser Gln Leu Ala Gln Leu Asn Gly Ser Ala Asn Ala Leu Phe Ile
50 55 60

Leu Tyr Tyr Thr Ala Gln Gly Glu Pro Phe Pro Asn Asn Leu Asp Lys
65 70 75 80

Leu Cys Gly Pro Asn Val Thr Asp Phe Pro Pro Phe His Ala Asn Gly
85 90 95

Thr Glu Lys Ala Lys Leu Val Glu Leu Tyr Arg Ile Val Val Tyr Leu
100 105 110

Gly Thr Ser Leu Gly Asn Ile Thr Arg Asp Gln Lys Ile Leu Asn Pro
115 120 125

Ser Ala Leu Ser Leu His Ser Lys Leu Asn Ala Thr Ala Asp Ile Leu
130 135 140

Arg Gly Leu Leu Ser Asn Val Leu Cys Arg Leu Cys Ser Lys Tyr His
145 150 155 160

Val Gly His Val Asp Val Pro Pro Val Pro Asp His Ser Asp Lys Glu
165 170 175

Ala Phe Gln Arg Lys Lys Leu Gly Cys Gln Leu Leu Gly Thr Tyr Lys
180 185 190

Gln Val Ile Ser Val Val Val Gln Ala Phe
195 200

<210> 61
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic polypeptide

<400> 61

Thr Tyr Gly Pro Asp Thr Ser Gly Lys Asp Val Phe Gln Lys Lys
 1 5 10 15

<210> 62
 <211> 448
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic polypeptide

<400> 62

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

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser His Ala
 20 25 30

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

Gly Gln Ile Lys Ala Lys Ser Asp Asp Tyr Ala Thr Tyr Tyr Ala Glu
 50 55 60

Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr
 65 70 75 80

Leu Tyr Leu Gln Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Val Tyr
 85 90 95

Tyr Cys Thr Cys Trp Glu Trp Asp Leu Asp Phe Trp Gly Gln Gly Thr
 100 105 110

Met Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro
 115 120 125

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

Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn
145 150 155 160

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

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

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

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

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

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

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

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

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

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

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

Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu

340

345

350

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

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

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

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

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

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

<210> 63

<211> 1344

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic polynucleotide

<400> 63

caggtgcagc tgcaggagag cggcggcggc ctggtgaagc ccggcggcag cctgaggctg 60

agctgcgccg ccagcggctt caccttcagc cacgcctgga tgcactgggt gaggcaggcc 120

cccggcaagg gcctggagtg ggtgggccag atcaaggcca agagcgacga ctacgccacc 180

tactacgccg agagcgtgaa gggcaggttc accatcagca gggacgacag caagaacacc 240

ctgtacctgc agatgaacag cctgaagacc gaggacaccg ccgtgtacta ctgcacctgc 300

tgggagtggg acctggactt ctggggccag ggcaccatgg tgaccgtgag cagcgccagc 360

accaagggcc ccagcgtgtt ccccttgccc cccagcagca agagcaccag cggcggcacc 420

gccgccctgg gctgcctggt gaaggactac ttccccgagc ccgtgaccgt gagctggaac 480
 agcggcgccc tgaccagcgg cgtgcacacc ttccccgccg tgctgcagag cagcggcctg 540
 tacagcctga gcagcgtggt gaccgtgccc agcagcagcc tgggcaccca gacctacatc 600
 tgcaacgtga accacaagcc cagcaacacc aaggtggaca agagggtgga gccaagagc 660
 tgcgacaaga cccacacctg cccccctgc cccgcccccg agctgctggg cggccccagc 720
 gtgttcctgt tcccccccaa gccaaggac accctgatga tcagcaggac ccccgagggtg 780
 acctgcgtgg tgggtggacgt gagccacgag gacccccagg tgaagttcaa ctggtacgtg 840
 gacggcgtgg aggtgcacaa cgccaagacc aagcccaggg aggagcagta caacagcacc 900
 tacagggtgg tgagcgtgct gaccgtgctg caccaggact ggctgaacgg caaggagtac 960
 aagtgcgaagg tgagcaacaa ggccctgccc gcccccatcg agaagaccat cagcaaggcc 1020
 aagggccagc ccaggagacc ccaggtgtac accctgcccc ccagcaggga ggagatgacc 1080
 aagaaccagg tgagcctgac ctgcctggtg aagggttctt accccagcga catcgccgtg 1140
 gagtggggaga gcaacggcca gcccgagaac aactacaaga ccaccccccc cgtgctggac 1200
 agcgacggca gcttcttcct gtacagcaag ctgaccgtgg acaagagcag gtggcagcag 1260
 ggcaacgtgt tcagctgcag cgtgatgcac gaggccctgc acaaccacta caccagaag 1320
 agcctgagcc tgagccccgg caag 1344

<210> 64
 <211> 220
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic polypeptide

<400> 64

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

Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu Asp Ser
 20 25 30

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

Pro Arg Leu Leu Ile Tyr Ser Val Ser Asn Leu Glu Ser Gly Val Pro
50 55 60

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

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

Thr His Ala Pro Pro Tyr Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile
100 105 110

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

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

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

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

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

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

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

<210> 65

<211> 660
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic polynucleotide

<400> 65
gacatcgtga tgacccagac ccccctgagc agccccgtga ccctgggcca gcccgccagc 60
atcagctgca ggagcagcca gagcctgctg gacagcgacg gccacaccta cctgaactgg 120
ctgcagcaga ggcccggcca gccccccagg ctgctgatct acagcgtgag caacctggag 180
agcggcgtgc ccgacagggt cagcggcagc ggcgccggca ccgacttcac cctgaagatc 240
agcaggggtgg aggccgagga cgtgggcgtg tactactgca tgcaggccac ccacgcccc 300
ccctacacct tcggccaggg caccaagctg gagatcaaga ggaccgtggc cgccccccagc 360
gtgttcatct tcccccccag cgacgagcag ctgaagagcg gcaccgccag cgtggtgtgc 420
ctgctgaaca acttctaccc cagggaggcc aagggtgcagt ggaagggtgga caacgccctg 480
cagagcggca acagccagga gagcgtgacc gagcaggaca gcaaggacag cacctacagc 540
ctgagcagca ccctgaccct gagcaaggcc gactacgaga agcacaaggt gtacgcctgc 600
gaggtgaccc accagggcct gagcagcccc gtgaccaaga gcttcaacag gggcgagtgc 660

<210> 66
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic polypeptide

<400> 66

Lys Ala Ser Gln Asp Val Ser Asn Ala Val Ala
1 5 10

<210> 67
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic polypeptide

<400> 67

Trp Ala Ser Phe Arg His Thr
1 5

<210> 68
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic polypeptide

<400> 68

Gln Gln His Tyr Asn Thr Pro Tyr Thr
1 5

<210> 69
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic polypeptide

<400> 69

Ser Tyr Pro Met Phe
1 5

<210> 70
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic polypeptide

<400> 70

Tyr Ile Ser Asn Gly Gly Asp Ser Thr Tyr Tyr Pro Asp Thr Val Lys
1 5 10 15

Gly

<210> 71
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic polypeptide

<400> 71

Pro Ser Ala Arg Tyr Asp Glu Trp Phe Ala Tyr
1 5 10

<210> 72
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic polynucleotide

<400> 72
gacatcgtga tgaccagtc ccacaagttc atgagcacca gcgtgggcga tcgggtgtcc 60
atcacctgta aggcctccca ggacgtgagc aacgccgtgg cctggtatca gcagaagcct 120
ggccagtccc ctcggtgct gatctattgg gcttccttca ggcacaccgg cgtgcccgat 180
cggttcaccg gctccggatc cggcaccgag tataccctga ccatctcccg ggtgcaggcc 240
gaggatctgg ctctgtatta ttgtcagcag cactacaata cccctacac cttcggcggc 300
ggcaccaggc tggagatcaa g 321

<210> 73
<211> 360
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic polynucleotide

<400> 73

gaggtgatgc tggaggagag cggcggcggc ctggtgcagc ctggaggatc tcggaggctg 60
 agctgtgccg ccagcggctt caccttctcc tcctatccca tgttctgggt gaggcagacc 120
 cccgagaagc ggatggagtg ggtggcctat atctccaatg gcggcgattc cacctattat 180
 cctgacaccg tgaagggccg gttcaccgtg agccgggata acgccaagaa taccctgtac 240
 ctgcagatga gcagcctgaa gtccgtggac accgctatct actattgcgt gaggccctcc 300
 gctcgggtacg acgagtgggt cgcctattgg ggccagggca ccctggtgac agtgagcgct 360

<210> 74
 <211> 109
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic polypeptide

<400> 74

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

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

Leu Ala Trp Tyr Gln Gln Lys Gln Gly Lys Ser Pro Gln Leu Leu Val
 35 40 45

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

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

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

Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys Arg Ala
 100 105

<210> 75
<211> 117
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic polypeptide

<400> 75

Glu Val Met Leu Val Glu Ser Gly Gly Gly Leu Val Lys Pro Gly Gly
1 5 10 15

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Ile Phe Ser Ser Tyr
20 25 30

Ala Met Ser Trp Val Arg Gln Ser Pro Glu Thr Arg Leu Glu Trp Val
35 40 45

Ala Thr Ile Ser Ser Gly Gly Ser Asn Thr Tyr Ser Pro Asp Ser Val
50 55 60

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

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

Ala Arg Tyr Tyr Gly Tyr Tyr Phe Asp Phe Trp Gly Gln Gly Thr Thr
100 105 110

Leu Thr Val Ser Ser
115

<210> 76
<211> 327
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic polynucleotide

<400> 76
gacatccaca tgactcagtc tccagcctcc ctatctgcat ctgtgggaga aactgtcacc 60
atcacatgtc gagcaagtga gaatatttac agttatttag catgggtatca gcagaaacag 120
ggaaaatctc ctgagctcct ggtctataat gcaaaaacct tagcagaagg tgtgccatca 180
aggttcagtg gcagtggatc aggcacacag ttttctctga agatcaacag cctgcagcct 240
gaagattttg ggagttatta ctgtcaacat cattatgtta ctccgctcac gttcgggtgct 300
gggaccaagc tggagctgaa acgggct 327

<210> 77
<211> 351
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic polynucleotide

<400> 77
gaagtgatgc tgggtggagtc tgggggaggc ttagtgaagc ctggagggtc cctgaaaactc 60
tcctgtgcag cctctggatt cattttcagt agttatgcc a tgtcttgggt tcgccagagt 120
ccggagacga ggctggagtg ggtcgcaacc attagtagtg gtggtagtaa cacctactct 180
ccagacagtg tgaaggggcg attcaccatc tccagagaca atgccaagaa caccctgtac 240
ctgcaaatga gcagtctgag gtctgaggac acggccatgt attactgtgc aagatattat 300
ggttactact ttgacttctg gggccaaggc accactctca cagtctcctc a 351

<210> 78
<211> 118
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic polypeptide

<400> 78

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

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser His Ala
20 25 30

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

Gly Gln Ile Lys Ala Lys Ser Asp Asp Tyr Ala Thr Tyr Tyr Ala Glu
50 55 60

Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr
65 70 75 80

Leu Tyr Leu Gln Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Val Tyr
85 90 95

Tyr Cys Thr Cys Trp Glu Trp Asp Leu Asp Phe Trp Gly Gln Gly Thr
100 105 110

Met Val Thr Val Ser Ser
115

<210> 79
<211> 116
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic polypeptide

<400> 79

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

Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu Asp Ser
20 25 30

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

Pro Arg Leu Leu Ile Tyr Ser Val Ser Asn Leu Glu Ser Gly Val Pro
50 55 60

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

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

Thr His Ala Pro Pro Tyr Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile
100 105 110

Lys Arg Thr Val
115

<210> 80
<211> 354
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic polynucleotide

<400> 80
cagggtgcagc tgcaggagag cggcggcggc ctggtgaagc ccggcggcag cctgaggctg 60
agctgcgccg ccagcggcctt caccttcagc cacgcctgga tgcactgggt gaggcaggcc 120
cccggcaagg gcctggagtg ggtgggccag atcaaggcca agagcgacga ctacgccacc 180
tactacgccg agagcgtgaa gggcagggtt accatcagca gggacgacag caagaacacc 240
ctgtacctgc agatgaacag cctgaagacc gaggacaccg ccgtgtacta ctgcacctgc 300
tgggagtggg acctggactt ctggggccag ggcaccatgg tgaccgtgag cagc 354

<210> 81
<211> 348
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic polynucleotide

<400> 81
gacatcgtga tgacccagac cccctgagc agccccgtga ccctgggcca gcccgccagc 60
atcagctgca ggagcagcca gagcctgctg gacagcgacg gccacaccta cctgaactgg 120
ctgcagcaga ggcccggcca gccccccagg ctgctgatct acagcgtgag caacctggag 180
agcggcgtgc ccgacagggt cagcggcagc ggcgccggca ccgacttcac cctgaagatc 240
agcaggggtgg aggccgagga cgtgggcgtg tactactgca tgcaggccac ccacgcccc 300
ccctacacct tcggccaggg caccaagctg gagatcaaga ggaccgtg 348

<210> 82
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic polypeptide

<400> 82

Asp Ile Val Met Thr Gln Ser His Lys Phe Met Ser Thr Ser Val Gly
1 5 10 15

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

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

Tyr Trp Ala Ser Phe Arg His Thr Gly Val Pro Asp Arg Phe Thr Gly
50 55 60

Ser Gly Ser Gly Thr Glu Tyr Thr Leu Thr Ile Ser Arg Val Gln Ala
65 70 75 80

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

Thr Phe Gly Gly Gly Thr Arg Leu Glu Ile Lys

100

105

<210> 83
 <211> 120
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic polynucleotide

<400> 83

Glu Val Met Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15

Ser Arg Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
 20 25 30

Pro Met Phe Trp Val Arg Gln Thr Pro Glu Lys Arg Met Glu Trp Val
 35 40 45

Ala Tyr Ile Ser Asn Gly Gly Asp Ser Thr Tyr Tyr Pro Asp Thr Val
 50 55 60

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

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

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

Gly Thr Leu Val Thr Val Ser Ala
 115 120