SEQUENCE LISTING

<110> NGM Biopharmaceuticals, Inc.
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Haldankar, Raj
Tian, Hui

<120> COMPOSITIONS AND METHODS OF USE FOR TREATING METABOLIC DISORDERS

<130> NGMB-139WO

<150> US 62/031,063
<151> 2014-07-30

<160> 127

<170> PatentIn version 3.5

<210> 1
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<213> Homo sapiens

<400> 1

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Ala Arg Asn Gly Asp His Cys Pro Leu Gly Pro Gly Arg Cys Cys Arg
1               5                  10                  15


Leu His Thr Val Arg Ala Ser Leu Glu Asp Leu Gly Trp Ala Asp Trp
            20                  25                  30


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


Pro Ser Gln Phe Arg Ala Ala Asn Met His Ala Gln Ile Lys Thr Ser
    50                  55                  60


Leu His Arg Leu Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro
65                  70                  75                  80


Ala Ser Tyr Asn Pro Met Val Leu Ile Gln Lys Thr Asp Thr Gly Val
                85                  90                  95
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Ser Leu Gln Thr Tyr Asp Asp Leu Leu Ala Lys Asp Cys His Cys Ile
100 105 110

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Ala Arg Asn Gly Thr His Cys Pro Leu Gly Pro Gly Arg Cys Cys Arg
1 5 10 15

Leu His Thr Val Asn Ala Ser Leu Glu Asp Leu Gly Trp Ala Asp Trp
20 25 30

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

Pro Ser Gln Phe Arg Ala Ala Asn Met His Ala Gln Ile Lys Thr Ser
50 55 60

Leu His Arg Leu Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro
65 70 75 80

Ala Ser Tyr Asn Pro Met Val Leu Ile Gln Lys Thr Asp Thr Gly Val
85 90 95

Ser Leu Gln Thr Tyr Asp Asp Leu Leu Ala Lys Asp Cys His Cys Ile
100 105 110

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Ala Arg Asn Gly Asp His Cys Pro Leu Gly Pro Gly Arg Cys Cys Asn
1               5                  10                  15


Leu Thr Thr Val Arg Ala Ser Leu Glu Asp Leu Gly Trp Ala Asp Trp
            20                  25                  30


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


Pro Ser Gln Phe Arg Ala Ala Asn Met His Ala Gln Ile Lys Thr Ser
    50                  55                  60


Leu His Arg Leu Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro
65                  70                  75                  80


Ala Ser Tyr Asn Pro Met Val Leu Ile Gln Lys Thr Asp Thr Gly Val
                85                  90                  95


Ser Leu Gln Thr Tyr Asp Asp Leu Leu Ala Lys Asp Cys His Cys Ile
            100                 105                 110
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Ala Arg Asn Gly Asp His Cys Pro Leu Gly Pro Gly Arg Cys Cys Arg
1               5                  10                  15


Leu His Thr Val Arg Ala Asn Leu Thr Asp Leu Gly Trp Ala Asp Trp
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20 25 30

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

Pro Ser Gln Phe Arg Ala Ala Asn Met His Ala Gln Ile Lys Thr Ser
50 55 60

Leu His Arg Leu Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro
65 70 75 80

Ala Ser Tyr Asn Pro Met Val Leu Ile Gln Lys Thr Asp Thr Gly Val
85 90 95

Ser Leu Gln Thr Tyr Asp Asp Leu Leu Ala Lys Asp Cys His Cys Ile
100 105 110

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Ala Arg Asn Gly Asp His Cys Pro Leu Gly Pro Gly Arg Cys Cys Arg
1 5 10 15

Leu His Thr Val Arg Ala Ser Asn Glu Thr Leu Gly Trp Ala Asp Trp
20 25 30

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

Pro Ser Gln Phe Arg Ala Ala Asn Met His Ala Gln Ile Lys Thr Ser
50 55 60

```
Leu His Arg Leu Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro
65                  70                  75                  80


Ala Ser Tyr Asn Pro Met Val Leu Ile Gln Lys Thr Asp Thr Gly Val
                85                  90                  95


Ser Leu Gln Thr Tyr Asp Asp Leu Leu Ala Lys Asp Cys His Cys Ile
            100                 105                 110


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Ala Arg Asn Gly Asp His Cys Pro Leu Gly Pro Gly Arg Cys Cys Arg
1               5                   10                  15


Leu His Thr Val Arg Ala Ser Leu Glu Asp Leu Gly Trp Ala Asp Trp
            20                  25                  30


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


Pro Asn Gln Thr Arg Ala Ala Asn Met His Ala Gln Ile Lys Thr Ser
    50                  55                  60


Leu His Arg Leu Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro
65                  70                  75                  80


Ala Ser Tyr Asn Pro Met Val Leu Ile Gln Lys Thr Asp Thr Gly Val
                85                  90                  95


Ser Leu Gln Thr Tyr Asp Asp Leu Leu Ala Lys Asp Cys His Cys Ile
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100 105 110

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Ala Arg Asn Gly Asp His Cys Pro Leu Gly Pro Gly Arg Cys Cys Arg
1 5 10 15

Leu His Thr Val Arg Ala Ser Leu Glu Asp Leu Gly Trp Ala Asp Trp
20 25 30

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

Pro Ser Asn Phe Thr Ala Ala Asn Met His Ala Gln Ile Lys Thr Ser
50 55 60

Leu His Arg Leu Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro
65 70 75 80

Ala Ser Tyr Asn Pro Met Val Leu Ile Gln Lys Thr Asp Thr Gly Val
85 90 95

Ser Leu Gln Thr Tyr Asp Asp Leu Leu Ala Lys Asp Cys His Cys Ile
100 105 110

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<400> 8

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Ala Arg Asn Gly Asp His Cys Pro Leu Gly Pro Gly Arg Cys Cys Arg
1               5                  10                  15

Leu His Thr Val Arg Ala Ser Leu Glu Asp Leu Gly Trp Ala Asp Trp
            20                  25                  30

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

Pro Ser Gln Asn Arg Thr Ala Asn Met His Ala Gln Ile Lys Thr Ser
    50                  55                  60

Leu His Arg Leu Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro
65                  70                  75                  80

Ala Ser Tyr Asn Pro Met Val Leu Ile Gln Lys Thr Asp Thr Gly Val
                85                  90                  95

Ser Leu Gln Thr Tyr Asp Asp Leu Leu Ala Lys Asp Cys His Cys Ile
            100                 105                 110
```

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<400> 9

```
Ala Arg Asn Gly Asp His Cys Pro Leu Gly Pro Gly Arg Cys Cys Arg
1               5                  10                  15

Leu His Thr Val Arg Ala Ser Leu Glu Asp Leu Gly Trp Ala Asp Trp
            20                  25                  30
```

```
Val Leu Ser Pro Arg Glu Val Gln Val Thr Met Cys Ile Gly Ala Cys
        35                  40                  45

Pro Ser Gln Phe Asn Ala Thr Asn Met His Ala Gln Ile Lys Thr Ser
    50                  55                  60

Leu His Arg Leu Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro
65                  70                  75                  80

Ala Ser Tyr Asn Pro Met Val Leu Ile Gln Lys Thr Asp Thr Gly Val
                85                  90                  95

Ser Leu Gln Thr Tyr Asp Asp Leu Leu Ala Lys Asp Cys His Cys Ile
            100                 105                 110
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<400> 10

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Ala Arg Asn Gly Asp His Cys Pro Leu Gly Pro Gly Arg Cys Cys Arg
1               5                   10                  15

Leu His Thr Val Arg Ala Ser Leu Glu Asp Leu Gly Trp Ala Asp Trp
            20                  25                  30

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

Pro Ser Gln Phe Arg Ala Ala Asn Met His Ala Gln Ile Lys Thr Asn
    50                  55                  60

Leu Thr Arg Leu Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro
```

65 70 75 80

Ala Ser Tyr Asn Pro Met Val Leu Ile Gln Lys Thr Asp Thr Gly Val
85 90 95

Ser Leu Gln Thr Tyr Asp Asp Leu Leu Ala Lys Asp Cys His Cys Ile
100 105 110

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<400> 11

Ala Arg Asn Gly Asp His Cys Pro Leu Gly Pro Gly Arg Cys Cys Arg
1 5 10 15

Leu His Thr Val Arg Ala Ser Leu Glu Asp Leu Gly Trp Ala Asp Trp
20 25 30

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

Pro Ser Gln Phe Arg Ala Ala Asn Met His Ala Gln Ile Lys Thr Ser
50 55 60

Asn His Thr Leu Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro
65 70 75 80

Ala Ser Tyr Asn Pro Met Val Leu Ile Gln Lys Thr Asp Thr Gly Val
85 90 95

Ser Leu Gln Thr Tyr Asp Asp Leu Leu Ala Lys Asp Cys His Cys Ile
100 105 110

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<400> 12

Ala Arg Asn Gly Asp His Cys Pro Leu Gly Pro Gly Arg Cys Cys Arg
1 5 10 15

Leu His Thr Val Arg Ala Ser Leu Glu Asp Leu Gly Trp Ala Asp Trp
20 25 30

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

Pro Ser Gln Phe Arg Ala Ala Asn Met His Ala Gln Ile Lys Thr Ser
50 55 60

Leu His Arg Leu Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro
65 70 75 80

Ala Asn Tyr Thr Pro Met Val Leu Ile Gln Lys Thr Asp Thr Gly Val
85 90 95

Ser Leu Gln Thr Tyr Asp Asp Leu Leu Ala Lys Asp Cys His Cys Ile
100 105 110

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<400> 13

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Ala Arg Asn Gly Asp His Cys Pro Leu Gly Pro Gly Arg Cys Cys Arg
1               5                   10                  15


Leu His Thr Val Arg Ala Ser Leu Glu Asp Leu Gly Trp Ala Asp Trp
            20                  25                  30


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


Pro Ser Gln Phe Arg Ala Ala Asn Met His Ala Gln Ile Lys Thr Ser
    50                  55                  60


Leu His Arg Leu Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro
65                  70                  75                  80


Ala Ser Tyr Asn Pro Met Val Leu Ile Gln Asn Thr Thr Thr Gly Val
                85                  90                  95


Ser Leu Gln Thr Tyr Asp Asp Leu Leu Ala Lys Asp Cys His Cys Ile
            100                 105                 110


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<400>  14

Ala Arg Asn Gly Asp His Cys Pro Leu Gly Pro Gly Arg Cys Cys Arg
1               5                   10                  15


Leu His Thr Val Arg Ala Ser Leu Glu Asp Leu Gly Trp Ala Asp Trp
            20                  25                  30


Val Leu Ser Pro Arg Glu Val Gln Val Thr Met Cys Ile Gly Ala Cys
```

35 40 45

Pro Ser Gln Phe Arg Ala Ala Asn Met His Ala Gln Ile Lys Thr Ser
50 55 60

Leu His Arg Leu Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro
65 70 75 80

Ala Ser Tyr Asn Pro Met Val Leu Ile Gln Lys Thr Asn Thr Thr Val
85 90 95

Ser Leu Gln Thr Tyr Asp Asp Leu Leu Ala Lys Asp Cys His Cys Ile
100 105 110

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Ala Arg Asn Gly Asp His Cys Pro Leu Gly Pro Gly Arg Cys Cys Arg
1 5 10 15

Leu His Thr Val Arg Ala Ser Leu Glu Asp Leu Gly Trp Ala Asp Trp
20 25 30

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

Pro Ser Gln Phe Arg Ala Ala Asn Met His Ala Gln Ile Lys Thr Ser
50 55 60

Leu His Arg Leu Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro
65 70 75 80

```
Ala Ser Tyr Asn Pro Met Val Leu Ile Gln Lys Thr Asp Asn Gly Thr
                85                  90                  95


Ser Leu Gln Thr Tyr Asp Asp Leu Leu Ala Lys Asp Cys His Cys Ile
            100                 105                 110


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Ala Arg Asn Gly Asp His Cys Pro Leu Gly Pro Gly Arg Cys Cys Arg
1               5                   10                  15


Leu His Thr Val Arg Ala Ser Leu Glu Asp Leu Gly Trp Ala Asp Trp
            20                  25                  30


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


Pro Ser Gln Phe Arg Ala Ala Asn Met His Ala Gln Ile Lys Thr Ser
    50                  55                  60


Leu His Arg Leu Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro
65                  70                  75                  80


Ala Ser Tyr Asn Pro Met Val Leu Ile Gln Lys Thr Asp Thr Gly Asn
                85                  90                  95


Ser Thr Gln Thr Tyr Asp Asp Leu Leu Ala Lys Asp Cys His Cys Ile
            100                 105                 110


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<400> 17

Ala Arg Asn Gly Asp His Cys Pro Leu Gly Pro Gly Arg Cys Cys Arg
1 5 10 15

Leu His Thr Val Arg Ala Ser Leu Glu Asp Leu Gly Trp Ala Asp Trp
20 25 30

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

Pro Ser Gln Phe Arg Ala Ala Asn Met His Ala Gln Ile Lys Thr Ser
50 55 60

Leu His Arg Leu Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro
65 70 75 80

Ala Ser Tyr Asn Pro Met Val Leu Ile Gln Lys Thr Asp Thr Gly Val
85 90 95

Asn Leu Thr Thr Tyr Asp Asp Leu Leu Ala Lys Asp Cys His Cys Ile
100 105 110

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Ala Arg Asn Gly Asp His Cys Pro Leu Gly Pro Gly Arg Cys Cys Arg

1 5 10 15

Leu His Thr Val Arg Ala Ser Leu Glu Asp Leu Gly Trp Ala Asp Trp
20 25 30

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

Pro Ser Gln Phe Arg Ala Ala Asn Met His Ala Gln Ile Lys Thr Ser
50 55 60

Leu His Arg Leu Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro
65 70 75 80

Ala Ser Tyr Asn Pro Met Val Leu Ile Gln Lys Thr Asp Thr Gly Val
85 90 95

Ser Leu Gln Thr Tyr Asp Asp Leu Leu Asn Lys Thr Cys His Cys Ile
100 105 110

<210> 19
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<400> 19

Gly Thr His Cys Pro Leu Gly Pro Gly Arg Cys Cys Arg Leu His Thr
1 5 10 15

Val Asn Ala Ser Leu Glu Asp Leu Gly Trp Ala Asp Trp Val Leu Ser
20 25 30

Pro Arg Glu Val Gln Val Thr Met Cys Ile Gly Ala Cys Pro Ser Gln
35 40 45

Phe Arg Ala Ala Asn Met His Ala Gln Ile Lys Thr Ser Leu His Arg
50 55 60

Leu Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro Ala Ser Tyr
65 70 75 80

Asn Pro Met Val Leu Ile Gln Lys Thr Asp Thr Gly Val Ser Leu Gln
85 90 95

Thr Tyr Asp Asp Leu Leu Ala Lys Asp Cys His Cys Ile
100 105

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<400> 20

Gly Asp His Cys Pro Leu Gly Pro Gly Arg Cys Cys Asn Leu Thr Thr
1 5 10 15

Val Arg Ala Ser Leu Glu Asp Leu Gly Trp Ala Asp Trp Val Leu Ser
20 25 30

Pro Arg Glu Val Gln Val Thr Met Cys Ile Gly Ala Cys Pro Ser Gln
35 40 45

Phe Arg Ala Ala Asn Met His Ala Gln Ile Lys Thr Ser Leu His Arg
50 55 60

Leu Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro Ala Ser Tyr
65 70 75 80

Asn Pro Met Val Leu Ile Gln Lys Thr Asp Thr Gly Val Ser Leu Gln

85 90 95

Thr Tyr Asp Asp Leu Leu Ala Lys Asp Cys His Cys Ile
100 105

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Gly Asp His Cys Pro Leu Gly Pro Gly Arg Cys Cys Arg Leu His Thr
1 5 10 15

Val Arg Ala Asn Leu Thr Asp Leu Gly Trp Ala Asp Trp Val Leu Ser
20 25 30

Pro Arg Glu Val Gln Val Thr Met Cys Ile Gly Ala Cys Pro Ser Gln
35 40 45

Phe Arg Ala Ala Asn Met His Ala Gln Ile Lys Thr Ser Leu His Arg
50 55 60

Leu Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro Ala Ser Tyr
65 70 75 80

Asn Pro Met Val Leu Ile Gln Lys Thr Asp Thr Gly Val Ser Leu Gln
85 90 95

Thr Tyr Asp Asp Leu Leu Ala Lys Asp Cys His Cys Ile
100 105

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<400> 22

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Gly Asp His Cys Pro Leu Gly Pro Gly Arg Cys Cys Arg Leu His Thr
1               5                   10                  15


Val Arg Ala Ser Asn Glu Thr Leu Gly Trp Ala Asp Trp Val Leu Ser
            20                  25                  30


Pro Arg Glu Val Gln Val Thr Met Cys Ile Gly Ala Cys Pro Ser Gln
        35                  40                  45


Phe Arg Ala Ala Asn Met His Ala Gln Ile Lys Thr Ser Leu His Arg
    50                  55                  60


Leu Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro Ala Ser Tyr
65                  70                  75                  80


Asn Pro Met Val Leu Ile Gln Lys Thr Asp Thr Gly Val Ser Leu Gln
                85                  90                  95


Thr Tyr Asp Asp Leu Leu Ala Lys Asp Cys His Cys Ile
            100                 105
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<400> 23

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Gly Asp His Cys Pro Leu Gly Pro Gly Arg Cys Cys Arg Leu His Thr
1               5                   10                  15
```

```
Val Arg Ala Ser Leu Glu Asp Leu Gly Trp Ala Asp Trp Val Leu Ser
            20                  25                  30


Pro Arg Glu Val Gln Val Thr Met Cys Ile Gly Ala Cys Pro Asn Gln
        35                  40                  45


Thr Arg Ala Ala Asn Met His Ala Gln Ile Lys Thr Ser Leu His Arg
    50                  55                  60


Leu Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro Ala Ser Tyr
65                  70                  75                  80


Asn Pro Met Val Leu Ile Gln Lys Thr Asp Thr Gly Val Ser Leu Gln
                85                  90                  95


Thr Tyr Asp Asp Leu Leu Ala Lys Asp Cys His Cys Ile
            100                 105


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<400>  24

Gly Asp His Cys Pro Leu Gly Pro Gly Arg Cys Cys Arg Leu His Thr
1               5                   10                  15


Val Arg Ala Ser Leu Glu Asp Leu Gly Trp Ala Asp Trp Val Leu Ser
            20                  25                  30


Pro Arg Glu Val Gln Val Thr Met Cys Ile Gly Ala Cys Pro Ser Asn
        35                  40                  45


Phe Thr Ala Ala Asn Met His Ala Gln Ile Lys Thr Ser Leu His Arg
```

50 55 60

Leu Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro Ala Ser Tyr
65 70 75 80

Asn Pro Met Val Leu Ile Gln Lys Thr Asp Thr Gly Val Ser Leu Gln
85 90 95

Thr Tyr Asp Asp Leu Leu Ala Lys Asp Cys His Cys Ile
100 105

<210> 25
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<400> 25

Gly Asp His Cys Pro Leu Gly Pro Gly Arg Cys Cys Arg Leu His Thr
1 5 10 15

Val Arg Ala Ser Leu Glu Asp Leu Gly Trp Ala Asp Trp Val Leu Ser
20 25 30

Pro Arg Glu Val Gln Val Thr Met Cys Ile Gly Ala Cys Pro Ser Gln
35 40 45

Asn Arg Thr Ala Asn Met His Ala Gln Ile Lys Thr Ser Leu His Arg
50 55 60

Leu Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro Ala Ser Tyr
65 70 75 80

Asn Pro Met Val Leu Ile Gln Lys Thr Asp Thr Gly Val Ser Leu Gln
85 90 95

Thr Tyr Asp Asp Leu Leu Ala Lys Asp Cys His Cys Ile
100 105

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<400> 26

Gly Asp His Cys Pro Leu Gly Pro Gly Arg Cys Cys Arg Leu His Thr
1 5 10 15

Val Arg Ala Ser Leu Glu Asp Leu Gly Trp Ala Asp Trp Val Leu Ser
20 25 30

Pro Arg Glu Val Gln Val Thr Met Cys Ile Gly Ala Cys Pro Ser Gln
35 40 45

Phe Asn Ala Thr Asn Met His Ala Gln Ile Lys Thr Ser Leu His Arg
50 55 60

Leu Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro Ala Ser Tyr
65 70 75 80

Asn Pro Met Val Leu Ile Gln Lys Thr Asp Thr Gly Val Ser Leu Gln
85 90 95

Thr Tyr Asp Asp Leu Leu Ala Lys Asp Cys His Cys Ile
100 105

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<400> 27

```
Gly Asp His Cys Pro Leu Gly Pro Gly Arg Cys Cys Arg Leu His Thr
1               5                  10                  15


Val Arg Ala Ser Leu Glu Asp Leu Gly Trp Ala Asp Trp Val Leu Ser
            20                  25                  30


Pro Arg Glu Val Gln Val Thr Met Cys Ile Gly Ala Cys Pro Ser Gln
        35                  40                  45


Phe Arg Ala Ala Asn Met His Ala Gln Ile Lys Thr Asn Leu Thr Arg
    50                  55                  60


Leu Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro Ala Ser Tyr
65                  70                  75                  80


Asn Pro Met Val Leu Ile Gln Lys Thr Asp Thr Gly Val Ser Leu Gln
                85                  90                  95


Thr Tyr Asp Asp Leu Leu Ala Lys Asp Cys His Cys Ile
            100                 105
```

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<400> 28

```
Gly Asp His Cys Pro Leu Gly Pro Gly Arg Cys Cys Arg Leu His Thr
1               5                  10                  15


Val Arg Ala Ser Leu Glu Asp Leu Gly Trp Ala Asp Trp Val Leu Ser
```

20 25 30

Pro Arg Glu Val Gln Val Thr Met Cys Ile Gly Ala Cys Pro Ser Gln
35 40 45

Phe Arg Ala Ala Asn Met His Ala Gln Ile Lys Thr Ser Asn His Thr
50 55 60

Leu Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro Ala Ser Tyr
65 70 75 80

Asn Pro Met Val Leu Ile Gln Lys Thr Asp Thr Gly Val Ser Leu Gln
85 90 95

Thr Tyr Asp Asp Leu Leu Ala Lys Asp Cys His Cys Ile
100 105

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<400> 29

Gly Asp His Cys Pro Leu Gly Pro Gly Arg Cys Cys Arg Leu His Thr
1 5 10 15

Val Arg Ala Ser Leu Glu Asp Leu Gly Trp Ala Asp Trp Val Leu Ser
20 25 30

Pro Arg Glu Val Gln Val Thr Met Cys Ile Gly Ala Cys Pro Ser Gln
35 40 45

Phe Arg Ala Ala Asn Met His Ala Gln Ile Lys Thr Ser Leu His Arg
50 55 60

```
Leu Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro Ala Asn Tyr
65                  70                  75                  80


Thr Pro Met Val Leu Ile Gln Lys Thr Asp Thr Gly Val Ser Leu Gln
                85                  90                  95


Thr Tyr Asp Asp Leu Leu Ala Lys Asp Cys His Cys Ile
            100                 105


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<400>  30

Gly Asp His Cys Pro Leu Gly Pro Gly Arg Cys Cys Arg Leu His Thr
1               5                   10                  15


Val Arg Ala Ser Leu Glu Asp Leu Gly Trp Ala Asp Trp Val Leu Ser
            20                  25                  30


Pro Arg Glu Val Gln Val Thr Met Cys Ile Gly Ala Cys Pro Ser Gln
        35                  40                  45


Phe Arg Ala Ala Asn Met His Ala Gln Ile Lys Thr Ser Leu His Arg
    50                  55                  60


Leu Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro Ala Ser Tyr
65                  70                  75                  80


Asn Pro Met Val Leu Ile Gln Asn Thr Thr Thr Gly Val Ser Leu Gln
                85                  90                  95


Thr Tyr Asp Asp Leu Leu Ala Lys Asp Cys His Cys Ile
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100 105

<210> 31
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<400> 31

Gly Asp His Cys Pro Leu Gly Pro Gly Arg Cys Cys Arg Leu His Thr
1 5 10 15

Val Arg Ala Ser Leu Glu Asp Leu Gly Trp Ala Asp Trp Val Leu Ser
20 25 30

Pro Arg Glu Val Gln Val Thr Met Cys Ile Gly Ala Cys Pro Ser Gln
35 40 45

Phe Arg Ala Ala Asn Met His Ala Gln Ile Lys Thr Ser Leu His Arg
50 55 60

Leu Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro Ala Ser Tyr
65 70 75 80

Asn Pro Met Val Leu Ile Gln Lys Thr Asn Thr Thr Val Ser Leu Gln
85 90 95

Thr Tyr Asp Asp Leu Leu Ala Lys Asp Cys His Cys Ile
100 105

<210> 32
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<400> 32

Gly Asp His Cys Pro Leu Gly Pro Gly Arg Cys Cys Arg Leu His Thr
1 5 10 15

Val Arg Ala Ser Leu Glu Asp Leu Gly Trp Ala Asp Trp Val Leu Ser
20 25 30

Pro Arg Glu Val Gln Val Thr Met Cys Ile Gly Ala Cys Pro Ser Gln
35 40 45

Phe Arg Ala Ala Asn Met His Ala Gln Ile Lys Thr Ser Leu His Arg
50 55 60

Leu Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro Ala Ser Tyr
65 70 75 80

Asn Pro Met Val Leu Ile Gln Lys Thr Asp Asn Gly Thr Ser Leu Gln
85 90 95

Thr Tyr Asp Asp Leu Leu Ala Lys Asp Cys His Cys Ile
100 105

<210> 33
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<400> 33

Gly Asp His Cys Pro Leu Gly Pro Gly Arg Cys Cys Arg Leu His Thr
1 5 10 15

Val Arg Ala Ser Leu Glu Asp Leu Gly Trp Ala Asp Trp Val Leu Ser
20 25 30

```
Pro Arg Glu Val Gln Val Thr Met Cys Ile Gly Ala Cys Pro Ser Gln
        35                  40                  45


Phe Arg Ala Ala Asn Met His Ala Gln Ile Lys Thr Ser Leu His Arg
    50                  55                  60


Leu Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro Ala Ser Tyr
65                  70                  75                  80


Asn Pro Met Val Leu Ile Gln Lys Thr Asp Thr Gly Asn Ser Thr Gln
                85                  90                  95


Thr Tyr Asp Asp Leu Leu Ala Lys Asp Cys His Cys Ile
            100                 105


<210>  34
<211>  109
<212>  PRT
<213>  Artificial sequence

<220>
<223>  synthetic polypeptide sequence

<400>  34

Gly Asp His Cys Pro Leu Gly Pro Gly Arg Cys Cys Arg Leu His Thr
1               5                   10                  15


Val Arg Ala Ser Leu Glu Asp Leu Gly Trp Ala Asp Trp Val Leu Ser
            20                  25                  30


Pro Arg Glu Val Gln Val Thr Met Cys Ile Gly Ala Cys Pro Ser Gln
        35                  40                  45


Phe Arg Ala Ala Asn Met His Ala Gln Ile Lys Thr Ser Leu His Arg
    50                  55                  60


Leu Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro Ala Ser Tyr
```

65 70 75 80

Asn Pro Met Val Leu Ile Gln Lys Thr Asp Thr Gly Val Asn Leu Thr
85 90 95

Thr Tyr Asp Asp Leu Leu Ala Lys Asp Cys His Cys Ile
100 105

<210> 35
<211> 109
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 35

Gly Asp His Cys Pro Leu Gly Pro Gly Arg Cys Cys Arg Leu His Thr
1 5 10 15

Val Arg Ala Ser Leu Glu Asp Leu Gly Trp Ala Asp Trp Val Leu Ser
20 25 30

Pro Arg Glu Val Gln Val Thr Met Cys Ile Gly Ala Cys Pro Ser Gln
35 40 45

Phe Arg Ala Ala Asn Met His Ala Gln Ile Lys Thr Ser Leu His Arg
50 55 60

Leu Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro Ala Ser Tyr
65 70 75 80

Asn Pro Met Val Leu Ile Gln Lys Thr Asp Thr Gly Val Ser Leu Gln
85 90 95

Thr Tyr Asp Asp Leu Leu Asn Lys Thr Cys His Cys Ile
100 105

<210> 36
<211> 4
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 36

Arg Gly Arg Arg
1

<210> 37
<211> 6
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 37

Arg Lys Arg Lys Lys Arg
1 5

<210> 38
<211> 4
<212> PRT
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<220>
<223> synthetic polypeptide sequence

<400> 38

Arg Lys Lys Arg
1

<210> 39
<211> 6
<212> PRT
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<220>
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<400> 39

Arg Arg Arg Lys Lys Arg
1 5

<210> 40
<211> 4
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<220>
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<400> 40

Gly Gly Gly Ser
1

<210> 41
<211> 5
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 41

Gly Gly Gly Gly Ser
1 5

<210> 42
<211> 4
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 42

Gly Gly Ser Gly

1

<210> 43
<211> 5
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 43

Gly Gly Ser Gly Gly
1 5

<210> 44
<211> 5
<212> PRT
<213> Artificial sequence

<220>
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<400> 44

Gly Ser Gly Ser Gly
1 5

<210> 45
<211> 5
<212> PRT
<213> Artificial sequence

<220>
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<400> 45

Gly Ser Gly Gly Gly
1 5

<210> 46
<211> 5
<212> PRT

<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 46

Gly Gly Gly Ser Gly
1 5

<210> 47
<211> 5
<212> PRT
<213> Artificial sequence

<220>
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<400> 47

Gly Ser Ser Ser Gly
1 5

<210> 48
<211> 12
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 48

Gly Gly Gly Ser Gly Gly Gly Ser Ile Glu Gly Arg
1 5 10

<210> 49
<211> 5
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 49

Gly Gly Gly Gly Gly
1 5

<210> 50
<211> 5
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 50

Glu Gly Gly Gly Ser
1 5

<210> 51
<211> 4
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<220>
<221> MISC_FEATURE
<222> (2)..(3)
<223> the amino acid at this position may be any amino acid

<220>
<221> MISC_FEATURE
<222> (4)..(4)
<223> the amino acid at this position may be any hydrophobic amino acid

<400> 51

Pro Xaa Xaa Xaa
1

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

<220>
<223> synthetic polypeptide sequence

<220>
<221> MISC_FEATURE
<222> (2)..(3)
<223> the amino acid at this position may be any amino acid

<220>
<221> MISC_FEATURE
<222> (4)..(4)
<223> the amino acid at this position may any hyrdrophobic amino acid

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> the amino acid at this position may be Ser or Thr

<400> 52

Pro Xaa Xaa Xaa Xaa
1   5

<210> 53
<211> 6
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<220>
<221> MISC_FEATURE
<222> (2)..(2)
<223> the amino acid at this position may be Leu or Gln

<400> 53

Pro Xaa Gly Met Thr Ser
1   5

<210> 54
<211> 5

<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<220>
<221> MISC_FEATURE
<222> (2)..(2)
<223> the amino acid at this position may be Leu or Gln

<400> 54

Pro Xaa Gly Met Thr
1 5

<210> 55
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 55

Cys Gly Leu Val Pro Ala Gly Ser Gly Pro
1 5 10

<210> 56
<211> 12
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 56

Ser Leu Leu Lys Ser Arg Met Val Pro Asn Phe Asn
1 5 10

<210> 57
<211> 12

<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 57

Ser Leu Leu Ile Ala Arg Arg Met Pro Asn Phe Asn
1 5 10

<210> 58
<211> 12
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 58

Ser Lys Leu Val Gln Ala Ser Ala Ser Gly Val Asn
1 5 10

<210> 59
<211> 12
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 59

Ser Ser Tyr Leu Lys Ala Ser Asp Ala Pro Asp Asn
1 5 10

<210> 60
<211> 12
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 60

Arg Pro Lys Pro Gln Gln Phe Phe Gly Leu Met Asn
1 5 10

<210> 61
<211> 12
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 61

Ser Leu Arg Pro Leu Ala Leu Trp Arg Ser Phe Asn
1 5 10

<210> 62
<211> 12
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 62

Ser Pro Gln Gly Ile Ala Gly Gln Arg Asn Phe Asn
1 5 10

<210> 63
<211> 14
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 63

Asp Val Asp Glu Arg Asp Val Arg Gly Phe Ala Ser Phe Leu
1 5 10

<210> 64
<211> 12
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 64

Ser Leu Pro Leu Gly Leu Trp Ala Pro Asn Phe Asn
1 5 10

<210> 65
<211> 12
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 65

Ser Leu Leu Ile Phe Arg Ser Trp Ala Asn Phe Asn
1 5 10

<210> 66
<211> 12
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 66

Ser Gly Val Val Ile Ala Thr Val Ile Val Ile Thr
1 5 10

<210> 67
<211> 12
<212> PRT
<213> Artificial sequence

<220>

<223> synthetic polypeptide sequence

<400> 67

Ser Leu Gly Pro Gln Gly Ile Trp Gly Gln Phe Asn
1 5 10

<210> 68
<211> 12
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 68

Lys Lys Ser Pro Gly Arg Val Val Gly Gly Ser Val
1 5 10

<210> 69
<211> 12
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 69

Pro Gln Gly Leu Leu Gly Ala Pro Gly Ile Leu Gly
1 5 10

<210> 70
<211> 31
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 70

His Gly Pro Glu Gly Leu Arg Val Gly Phe Tyr Glu Ser Asp Val Met
1 5 10 15

Gly Arg Gly His Ala Arg Leu Val His Val Glu Glu Pro His Thr
20 25 30

<210> 71
<211> 12
<212> PRT
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<220>
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<400> 71

Gly Pro Gln Gly Leu Ala Gly Gln Arg Gly Ile Val
1 5 10

<210> 72
<211> 12
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 72

Gly Gly Ser Gly Gln Arg Gly Arg Lys Ala Leu Glu
1 5 10

<210> 73
<211> 12
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 73

Ser Leu Ser Ala Leu Leu Ser Ser Asp Ile Phe Asn
1 5 10

<210> 74
<211> 12
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 74

Ser Leu Pro Arg Phe Lys Ile Ile Gly Gly Phe Asn
1 5 10

<210> 75
<211> 12
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 75

Ser Leu Leu Gly Ile Ala Val Pro Gly Asn Phe Asn
1 5 10

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

<220>
<223> synthetic polypeptide sequence

<400> 76

Phe Phe Lys Asn Ile Val Thr Pro Arg Thr Pro Pro
1 5 10

<210> 77
<211> 734
<212> PRT
<213> Artificial sequence

<220>

<223> synthetic polypeptide sequence

<400> 77

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Met Asp Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Leu Trp
1               5                   10                  15


Leu Arg Gly Ala Arg Cys Asp Ala His Lys Ser Glu Val Ala His Arg
            20                  25                  30


Phe Lys Asp Leu Gly Glu Glu Asn Phe Lys Ala Leu Val Leu Ile Ala
        35                  40                  45


Phe Ala Gln Tyr Leu Gln Gln Cys Pro Phe Glu Asp His Val Lys Leu
    50                  55                  60


Val Asn Glu Val Thr Glu Phe Ala Lys Thr Cys Val Ala Asp Glu Ser
65                  70                  75                  80


Ala Glu Asn Cys Asp Lys Ser Leu His Thr Leu Phe Gly Asp Lys Leu
                85                  90                  95


Cys Thr Val Ala Thr Leu Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys
            100                 105                 110


Cys Ala Lys Gln Glu Pro Glu Arg Asn Glu Cys Phe Leu Gln His Lys
        115                 120                 125


Asp Asp Asn Pro Asn Leu Pro Arg Leu Val Arg Pro Glu Val Asp Val
    130                 135                 140


Met Cys Thr Ala Phe His Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr
145                 150                 155                 160


Leu Tyr Glu Ile Ala Arg Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu
                165                 170                 175
```

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

Ala Ala Asp Lys Ala Ala Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg
        195                 200                 205

Asp Glu Gly Lys Ala Ser Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser
    210                 215                 220

Leu Gln Lys Phe Gly Glu Arg Ala Phe Lys Ala Trp Ala Val Ala Arg
225                 230                 235                 240

Leu Ser Gln Arg Phe Pro Lys Ala Glu Phe Ala Glu Val Ser Lys Leu
                245                 250                 255

Val Thr Asp Leu Thr Lys Val His Thr Glu Cys Cys His Gly Asp Leu
            260                 265                 270

Leu Glu Cys Ala Asp Asp Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu
        275                 280                 285

Asn Gln Asp Ser Ile Ser Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro
    290                 295                 300

Leu Leu Glu Lys Ser His Cys Ile Ala Glu Val Glu Asn Asp Glu Met
305                 310                 315                 320

Pro Ala Asp Leu Pro Ser Leu Ala Ala Asp Phe Val Glu Ser Lys Asp
                325                 330                 335

Val Cys Lys Asn Tyr Ala Glu Ala Lys Asp Val Phe Leu Gly Met Phe
            340                 345                 350

Leu Tyr Glu Tyr Ala Arg Arg His Pro Asp Tyr Ser Val Val Leu Leu
        355                 360                 365
```

```
Leu Arg Leu Ala Lys Thr Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala
    370                 375                 380

Ala Ala Asp Pro His Glu Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys
385                 390                 395                 400

Pro Leu Val Glu Glu Pro Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu
                405                 410                 415

Phe Glu Gln Leu Gly Glu Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg
            420                 425                 430

Tyr Thr Lys Lys Val Pro Gln Val Ser Thr Pro Thr Leu Val Glu Val
        435                 440                 445

Ser Arg Asn Leu Gly Lys Val Gly Ser Lys Cys Cys Lys His Pro Glu
    450                 455                 460

Ala Lys Arg Met Pro Cys Ala Glu Asp Tyr Leu Ser Val Val Leu Asn
465                 470                 475                 480

Gln Leu Cys Val Leu His Glu Lys Thr Pro Val Ser Asp Arg Val Thr
                485                 490                 495

Lys Cys Cys Thr Glu Ser Leu Val Asn Arg Arg Pro Cys Phe Ser Ala
            500                 505                 510

Leu Glu Val Asp Glu Thr Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr
        515                 520                 525

Phe Thr Phe His Ala Asp Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln
    530                 535                 540

Ile Lys Lys Gln Thr Ala Leu Val Glu Leu Val Lys His Lys Pro Lys
545                 550                 555                 560
```

```
Ala Thr Lys Glu Gln Leu Lys Ala Val Met Asp Asp Phe Ala Ala Phe
                565                 570                 575

Val Glu Lys Cys Cys Lys Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu
            580                 585                 590

Glu Gly Lys Lys Leu Val Ala Ala Ser Gln Ala Ala Leu Gly Leu Gly
        595                 600                 605

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ala Arg
    610                 615                 620

Asn Gly Asp His Cys Pro Leu Gly Pro Gly Arg Cys Cys Arg Leu His
625                 630                 635                 640

Thr Val Arg Ala Ser Leu Glu Asp Leu Gly Trp Ala Asp Trp Val Leu
                645                 650                 655

Ser Pro Arg Glu Val Gln Val Thr Met Cys Ile Gly Ala Cys Pro Ser
            660                 665                 670

Gln Phe Arg Ala Ala Asn Met His Ala Gln Ile Lys Thr Ser Leu His
        675                 680                 685

Arg Leu Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro Ala Ser
    690                 695                 700

Tyr Asn Pro Met Val Leu Ile Gln Lys Thr Asp Thr Gly Val Ser Leu
705                 710                 715                 720

Gln Thr Tyr Asp Asp Leu Leu Ala Lys Asp Cys His Cys Ile
                725                 730
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<210> 78
<211> 731
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 78

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Met Asp Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Leu Trp
1               5                  10                  15


Leu Arg Gly Ala Arg Cys Asp Ala His Lys Ser Glu Val Ala His Arg
            20                  25                  30


Phe Lys Asp Leu Gly Glu Glu Asn Phe Lys Ala Leu Val Leu Ile Ala
        35                  40                  45


Phe Ala Gln Tyr Leu Gln Gln Cys Pro Phe Glu Asp His Val Lys Leu
    50                  55                  60


Val Asn Glu Val Thr Glu Phe Ala Lys Thr Cys Val Ala Asp Glu Ser
65                  70                  75                  80


Ala Glu Asn Cys Asp Lys Ser Leu His Thr Leu Phe Gly Asp Lys Leu
                85                  90                  95


Cys Thr Val Ala Thr Leu Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys
            100                 105                 110


Cys Ala Lys Gln Glu Pro Glu Arg Asn Glu Cys Phe Leu Gln His Lys
        115                 120                 125


Asp Asp Asn Pro Asn Leu Pro Arg Leu Val Arg Pro Glu Val Asp Val
    130                 135                 140


Met Cys Thr Ala Phe His Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr
145                 150                 155                 160


Leu Tyr Glu Ile Ala Arg Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu
                165                 170                 175
```

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

Ala Ala Asp Lys Ala Ala Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg
        195                 200                 205

Asp Glu Gly Lys Ala Ser Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser
    210                 215                 220

Leu Gln Lys Phe Gly Glu Arg Ala Phe Lys Ala Trp Ala Val Ala Arg
225                 230                 235                 240

Leu Ser Gln Arg Phe Pro Lys Ala Glu Phe Ala Glu Val Ser Lys Leu
                245                 250                 255

Val Thr Asp Leu Thr Lys Val His Thr Glu Cys Cys His Gly Asp Leu
            260                 265                 270

Leu Glu Cys Ala Asp Asp Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu
        275                 280                 285

Asn Gln Asp Ser Ile Ser Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro
    290                 295                 300

Leu Leu Glu Lys Ser His Cys Ile Ala Glu Val Glu Asn Asp Glu Met
305                 310                 315                 320

Pro Ala Asp Leu Pro Ser Leu Ala Ala Asp Phe Val Glu Ser Lys Asp
                325                 330                 335

Val Cys Lys Asn Tyr Ala Glu Ala Lys Asp Val Phe Leu Gly Met Phe
            340                 345                 350

Leu Tyr Glu Tyr Ala Arg Arg His Pro Asp Tyr Ser Val Val Leu Leu
        355                 360                 365
```

```
Leu Arg Leu Ala Lys Thr Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala
    370                 375                 380

Ala Ala Asp Pro His Glu Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys
385                 390                 395                 400

Pro Leu Val Glu Glu Pro Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu
                405                 410                 415

Phe Glu Gln Leu Gly Glu Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg
            420                 425                 430

Tyr Thr Lys Lys Val Pro Gln Val Ser Thr Pro Thr Leu Val Glu Val
        435                 440                 445

Ser Arg Asn Leu Gly Lys Val Gly Ser Lys Cys Cys Lys His Pro Glu
    450                 455                 460

Ala Lys Arg Met Pro Cys Ala Glu Asp Tyr Leu Ser Val Val Leu Asn
465                 470                 475                 480

Gln Leu Cys Val Leu His Glu Lys Thr Pro Val Ser Asp Arg Val Thr
                485                 490                 495

Lys Cys Cys Thr Glu Ser Leu Val Asn Arg Arg Pro Cys Phe Ser Ala
            500                 505                 510

Leu Glu Val Asp Glu Thr Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr
        515                 520                 525

Phe Thr Phe His Ala Asp Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln
    530                 535                 540

Ile Lys Lys Gln Thr Ala Leu Val Glu Leu Val Lys His Lys Pro Lys
545                 550                 555                 560
```

```
Ala Thr Lys Glu Gln Leu Lys Ala Val Met Asp Asp Phe Ala Ala Phe
                565                 570                 575

Val Glu Lys Cys Cys Lys Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu
            580                 585                 590

Glu Gly Lys Lys Leu Val Ala Ala Ser Gln Ala Ala Leu Gly Leu Gly
        595                 600                 605

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Asp
    610                 615                 620

His Cys Pro Leu Gly Pro Gly Arg Cys Cys Arg Leu His Thr Val Arg
625                 630                 635                 640

Ala Ser Leu Glu Asp Leu Gly Trp Ala Asp Trp Val Leu Ser Pro Arg
                645                 650                 655

Glu Val Gln Val Thr Met Cys Ile Gly Ala Cys Pro Ser Gln Phe Arg
            660                 665                 670

Ala Ala Asn Met His Ala Gln Ile Lys Thr Ser Leu His Arg Leu Lys
        675                 680                 685

Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro Ala Ser Tyr Asn Pro
    690                 695                 700

Met Val Leu Ile Gln Lys Thr Asp Thr Gly Val Ser Leu Gln Thr Tyr
705                 710                 715                 720

Asp Asp Leu Leu Ala Lys Asp Cys His Cys Ile
                725                 730
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<210> 79
<211> 741

<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 79

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Met Asp Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Leu Trp
1               5                   10                  15


Leu Arg Gly Ala Arg Cys Asp Ala His Lys Ser Glu Val Ala His Arg
            20                  25                  30


Phe Lys Asp Leu Gly Glu Glu Asn Phe Lys Ala Leu Val Leu Ile Ala
        35                  40                  45


Phe Ala Gln Tyr Leu Gln Gln Cys Pro Phe Glu Asp His Val Lys Leu
    50                  55                  60


Val Asn Glu Val Thr Glu Phe Ala Lys Thr Cys Val Ala Asp Glu Ser
65                  70                  75                  80


Ala Glu Asn Cys Asp Lys Ser Leu His Thr Leu Phe Gly Asp Lys Leu
                85                  90                  95


Cys Thr Val Ala Thr Leu Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys
            100                 105                 110


Cys Ala Lys Gln Glu Pro Glu Arg Asn Glu Cys Phe Leu Gln His Lys
        115                 120                 125


Asp Asp Asn Pro Asn Leu Pro Arg Leu Val Arg Pro Glu Val Asp Val
    130                 135                 140


Met Cys Thr Ala Phe His Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr
145                 150                 155                 160
```

```
Leu Tyr Glu Ile Ala Arg Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu
                165                 170                 175

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

Ala Ala Asp Lys Ala Ala Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg
        195                 200                 205

Asp Glu Gly Lys Ala Ser Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser
    210                 215                 220

Leu Gln Lys Phe Gly Glu Arg Ala Phe Lys Ala Trp Ala Val Ala Arg
225                 230                 235                 240

Leu Ser Gln Arg Phe Pro Lys Ala Glu Phe Ala Glu Val Ser Lys Leu
                245                 250                 255

Val Thr Asp Leu Thr Lys Val His Thr Glu Cys Cys His Gly Asp Leu
            260                 265                 270

Leu Glu Cys Ala Asp Asp Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu
        275                 280                 285

Asn Gln Asp Ser Ile Ser Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro
    290                 295                 300

Leu Leu Glu Lys Ser His Cys Ile Ala Glu Val Glu Asn Asp Glu Met
305                 310                 315                 320

Pro Ala Asp Leu Pro Ser Leu Ala Ala Asp Phe Val Glu Ser Lys Asp
                325                 330                 335

Val Cys Lys Asn Tyr Ala Glu Ala Lys Asp Val Phe Leu Gly Met Phe
            340                 345                 350
```

```
Leu Tyr Glu Tyr Ala Arg Arg His Pro Asp Tyr Ser Val Val Leu Leu
        355                 360                 365

Leu Arg Leu Ala Lys Thr Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala
    370                 375                 380

Ala Ala Asp Pro His Glu Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys
385                 390                 395                 400

Pro Leu Val Glu Glu Pro Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu
                405                 410                 415

Phe Glu Gln Leu Gly Glu Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg
            420                 425                 430

Tyr Thr Lys Lys Val Pro Gln Val Ser Thr Pro Thr Leu Val Glu Val
        435                 440                 445

Ser Arg Asn Leu Gly Lys Val Gly Ser Lys Cys Cys Lys His Pro Glu
    450                 455                 460

Ala Lys Arg Met Pro Cys Ala Glu Asp Tyr Leu Ser Val Val Leu Asn
465                 470                 475                 480

Gln Leu Cys Val Leu His Glu Lys Thr Pro Val Ser Asp Arg Val Thr
                485                 490                 495

Lys Cys Cys Thr Glu Ser Leu Val Asn Arg Arg Pro Cys Phe Ser Ala
            500                 505                 510

Leu Glu Val Asp Glu Thr Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr
        515                 520                 525

Phe Thr Phe His Ala Asp Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln
    530                 535                 540
```

```
Ile Lys Lys Gln Thr Ala Leu Val Glu Leu Val Lys His Lys Pro Lys
545                 550                 555                 560


Ala Thr Lys Glu Gln Leu Lys Ala Val Met Asp Asp Phe Ala Ala Phe
                565                 570                 575


Val Glu Lys Cys Cys Lys Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu
            580                 585                 590


Glu Gly Lys Lys Leu Val Ala Ala Ser Gln Ala Ala Leu Gly Leu Gly
        595                 600                 605


Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
    610                 615                 620


Gly Gly Ser Gly Gly Gly Gly Ser Gly Asp His Cys Pro Leu Gly Pro
625                 630                 635                 640


Gly Arg Cys Cys Arg Leu His Thr Val Arg Ala Ser Leu Glu Asp Leu
                645                 650                 655


Gly Trp Ala Asp Trp Val Leu Ser Pro Arg Glu Val Gln Val Thr Met
            660                 665                 670


Cys Ile Gly Ala Cys Pro Ser Gln Phe Arg Ala Ala Asn Met His Ala
        675                 680                 685


Gln Ile Lys Thr Ser Leu His Arg Leu Lys Pro Asp Thr Val Pro Ala
    690                 695                 700


Pro Cys Cys Val Pro Ala Ser Tyr Asn Pro Met Val Leu Ile Gln Lys
705                 710                 715                 720


Thr Asp Thr Gly Val Ser Leu Gln Thr Tyr Asp Asp Leu Leu Ala Lys
                725                 730                 735
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Asp Cys His Cys Ile
            740

<210> 80
<211> 738
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 80

Met Asp Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Leu Trp
1   5   10   15

Leu Arg Gly Ala Arg Cys Asp Ala His Lys Ser Glu Val Ala His Arg
            20   25   30

Phe Lys Asp Leu Gly Glu Glu Asn Phe Lys Ala Leu Val Leu Ile Ala
        35   40   45

Phe Ala Gln Tyr Leu Gln Gln Cys Pro Phe Glu Asp His Val Lys Leu
    50   55   60

Val Asn Glu Val Thr Glu Phe Ala Lys Thr Cys Val Ala Asp Glu Ser
65   70   75   80

Ala Glu Asn Cys Asp Lys Ser Leu His Thr Leu Phe Gly Asp Lys Leu
                85   90   95

Cys Thr Val Ala Thr Leu Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys
            100   105   110

Cys Ala Lys Gln Glu Pro Glu Arg Asn Glu Cys Phe Leu Gln His Lys
        115   120   125

Asp Asp Asn Pro Asn Leu Pro Arg Leu Val Arg Pro Glu Val Asp Val
    130   135   140

```
Met Cys Thr Ala Phe His Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr
145                 150                 155                 160

Leu Tyr Glu Ile Ala Arg Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu
                165                 170                 175

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

Ala Ala Asp Lys Ala Ala Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg
        195                 200                 205

Asp Glu Gly Lys Ala Ser Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser
    210                 215                 220

Leu Gln Lys Phe Gly Glu Arg Ala Phe Lys Ala Trp Ala Val Ala Arg
225                 230                 235                 240

Leu Ser Gln Arg Phe Pro Lys Ala Glu Phe Ala Glu Val Ser Lys Leu
                245                 250                 255

Val Thr Asp Leu Thr Lys Val His Thr Glu Cys Cys His Gly Asp Leu
            260                 265                 270

Leu Glu Cys Ala Asp Asp Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu
        275                 280                 285

Asn Gln Asp Ser Ile Ser Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro
    290                 295                 300

Leu Leu Glu Lys Ser His Cys Ile Ala Glu Val Glu Asn Asp Glu Met
305                 310                 315                 320

Pro Ala Asp Leu Pro Ser Leu Ala Ala Asp Phe Val Glu Ser Lys Asp
                325                 330                 335
```

```
Val Cys Lys Asn Tyr Ala Glu Ala Lys Asp Val Phe Leu Gly Met Phe
            340                 345                 350

Leu Tyr Glu Tyr Ala Arg Arg His Pro Asp Tyr Ser Val Val Leu Leu
        355                 360                 365

Leu Arg Leu Ala Lys Thr Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala
    370                 375                 380

Ala Ala Asp Pro His Glu Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys
385                 390                 395                 400

Pro Leu Val Glu Glu Pro Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu
                405                 410                 415

Phe Glu Gln Leu Gly Glu Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg
            420                 425                 430

Tyr Thr Lys Lys Val Pro Gln Val Ser Thr Pro Thr Leu Val Glu Val
        435                 440                 445

Ser Arg Asn Leu Gly Lys Val Gly Ser Lys Cys Cys Lys His Pro Glu
    450                 455                 460

Ala Lys Arg Met Pro Cys Ala Glu Asp Tyr Leu Ser Val Val Leu Asn
465                 470                 475                 480

Gln Leu Cys Val Leu His Glu Lys Thr Pro Val Ser Asp Arg Val Thr
                485                 490                 495

Lys Cys Cys Thr Glu Ser Leu Val Asn Arg Arg Pro Cys Phe Ser Ala
            500                 505                 510

Leu Glu Val Asp Glu Thr Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr
        515                 520                 525
```

```
Phe Thr Phe His Ala Asp Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln
    530                 535                 540

Ile Lys Lys Gln Thr Ala Leu Val Glu Leu Val Lys His Lys Pro Lys
545                 550                 555                 560

Ala Thr Lys Glu Gln Leu Lys Ala Val Met Asp Asp Phe Ala Ala Phe
                565                 570                 575

Val Glu Lys Cys Cys Lys Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu
            580                 585                 590

Glu Gly Lys Lys Leu Val Ala Ala Ser Gln Ala Ala Leu Gly Leu Gly
        595                 600                 605

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
    610                 615                 620

Gly Gly Ser Gly Gly Gly Gly Ser Cys Pro Leu Gly Pro Gly Arg Cys
625                 630                 635                 640

Cys Arg Leu His Thr Val Arg Ala Ser Leu Glu Asp Leu Gly Trp Ala
                645                 650                 655

Asp Trp Val Leu Ser Pro Arg Glu Val Gln Val Thr Met Cys Ile Gly
            660                 665                 670

Ala Cys Pro Ser Gln Phe Arg Ala Ala Asn Met His Ala Gln Ile Lys
        675                 680                 685

Thr Ser Leu His Arg Leu Lys Pro Asp Thr Val Pro Ala Pro Cys Cys
    690                 695                 700

Val Pro Ala Ser Tyr Asn Pro Met Val Leu Ile Gln Lys Thr Asp Thr
705                 710                 715                 720
```

```
Gly Val Ser Leu Gln Thr Tyr Asp Asp Leu Leu Ala Lys Asp Cys His
                725                 730                 735


Cys Ile
```

<210> 81
<211> 134
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 81

```
Met Asp Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Leu Trp
1               5                   10                  15


Leu Arg Gly Ala Arg Cys Ala Arg Asn Gly Thr His Cys Pro Leu Gly
            20                  25                  30


Pro Gly Arg Cys Cys Arg Leu His Thr Val Asn Ala Ser Leu Glu Asp
        35                  40                  45


Leu Gly Trp Ala Asp Trp Val Leu Ser Pro Arg Glu Val Gln Val Thr
    50                  55                  60


Met Cys Ile Gly Ala Cys Pro Ser Gln Phe Arg Ala Ala Asn Met His
65                  70                  75                  80


Ala Gln Ile Lys Thr Ser Leu His Arg Leu Lys Pro Asp Thr Val Pro
                85                  90                  95


Ala Pro Cys Cys Val Pro Ala Ser Tyr Asn Pro Met Val Leu Ile Gln
            100                 105                 110
```

Lys Thr Asp Thr Gly Val Ser Leu Gln Thr Tyr Asp Asp Leu Leu Ala
115 120 125

Lys Asp Cys His Cys Ile
130

<210> 82
<211> 134
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 82

Met Asp Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Leu Trp
1 5 10 15

Leu Arg Gly Ala Arg Cys Ala Arg Asn Gly Asp His Cys Pro Leu Gly
20 25 30

Pro Gly Arg Cys Cys Asn Leu Thr Thr Val Arg Ala Ser Leu Glu Asp
35 40 45

Leu Gly Trp Ala Asp Trp Val Leu Ser Pro Arg Glu Val Gln Val Thr
50 55 60

Met Cys Ile Gly Ala Cys Pro Ser Gln Phe Arg Ala Ala Asn Met His
65 70 75 80

Ala Gln Ile Lys Thr Ser Leu His Arg Leu Lys Pro Asp Thr Val Pro
85 90 95

Ala Pro Cys Cys Val Pro Ala Ser Tyr Asn Pro Met Val Leu Ile Gln
100 105 110

Lys Thr Asp Thr Gly Val Ser Leu Gln Thr Tyr Asp Asp Leu Leu Ala
115 120 125

Lys Asp Cys His Cys Ile
130

<210> 83
<211> 134
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 83

Met Asp Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Leu Trp
1 5 10 15

Leu Arg Gly Ala Arg Cys Ala Arg Asn Gly Asp His Cys Pro Leu Gly
20 25 30

Pro Gly Arg Cys Cys Arg Leu His Thr Val Arg Ala Asn Leu Thr Asp
35 40 45

Leu Gly Trp Ala Asp Trp Val Leu Ser Pro Arg Glu Val Gln Val Thr
50 55 60

Met Cys Ile Gly Ala Cys Pro Ser Gln Phe Arg Ala Ala Asn Met His
65 70 75 80

Ala Gln Ile Lys Thr Ser Leu His Arg Leu Lys Pro Asp Thr Val Pro
85 90 95

Ala Pro Cys Cys Val Pro Ala Ser Tyr Asn Pro Met Val Leu Ile Gln
100 105 110

Lys Thr Asp Thr Gly Val Ser Leu Gln Thr Tyr Asp Asp Leu Leu Ala
115 120 125

Lys Asp Cys His Cys Ile
130

<210> 84
<211> 134
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 84

Met Asp Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Leu Trp
1 5 10 15

Leu Arg Gly Ala Arg Cys Ala Arg Asn Gly Asp His Cys Pro Leu Gly
20 25 30

Pro Gly Arg Cys Cys Arg Leu His Thr Val Arg Ala Ser Asn Glu Thr
35 40 45

Leu Gly Trp Ala Asp Trp Val Leu Ser Pro Arg Glu Val Gln Val Thr
50 55 60

Met Cys Ile Gly Ala Cys Pro Ser Gln Phe Arg Ala Ala Asn Met His
65 70 75 80

Ala Gln Ile Lys Thr Ser Leu His Arg Leu Lys Pro Asp Thr Val Pro
85 90 95

Ala Pro Cys Cys Val Pro Ala Ser Tyr Asn Pro Met Val Leu Ile Gln
100 105 110

Lys Thr Asp Thr Gly Val Ser Leu Gln Thr Tyr Asp Asp Leu Leu Ala
115 120 125

Lys Asp Cys His Cys Ile
130

<210> 85
<211> 134
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 85

Met Asp Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Leu Trp
1 5 10 15

Leu Arg Gly Ala Arg Cys Ala Arg Asn Gly Asp His Cys Pro Leu Gly
20 25 30

Pro Gly Arg Cys Cys Arg Leu His Thr Val Arg Ala Ser Leu Glu Asp
35 40 45

Leu Gly Trp Ala Asp Trp Val Leu Ser Pro Arg Glu Val Gln Val Thr
50 55 60

Met Cys Ile Gly Ala Cys Pro Asn Gln Thr Arg Ala Ala Asn Met His
65 70 75 80

Ala Gln Ile Lys Thr Ser Leu His Arg Leu Lys Pro Asp Thr Val Pro
85 90 95

Ala Pro Cys Cys Val Pro Ala Ser Tyr Asn Pro Met Val Leu Ile Gln
100 105 110

Lys Thr Asp Thr Gly Val Ser Leu Gln Thr Tyr Asp Asp Leu Leu Ala
115 120 125

Lys Asp Cys His Cys Ile
130

<210> 86
<211> 134
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 86

Met Asp Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Leu Trp
1 5 10 15

Leu Arg Gly Ala Arg Cys Ala Arg Asn Gly Asp His Cys Pro Leu Gly
20 25 30

Pro Gly Arg Cys Cys Arg Leu His Thr Val Arg Ala Ser Leu Glu Asp
35 40 45

Leu Gly Trp Ala Asp Trp Val Leu Ser Pro Arg Glu Val Gln Val Thr
50 55 60

Met Cys Ile Gly Ala Cys Pro Ser Asn Phe Thr Ala Ala Asn Met His
65 70 75 80

Ala Gln Ile Lys Thr Ser Leu His Arg Leu Lys Pro Asp Thr Val Pro
85 90 95

Ala Pro Cys Cys Val Pro Ala Ser Tyr Asn Pro Met Val Leu Ile Gln
100 105 110

Lys Thr Asp Thr Gly Val Ser Leu Gln Thr Tyr Asp Asp Leu Leu Ala
115 120 125

Lys Asp Cys His Cys Ile
130

<210> 87
<211> 134

<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 87

```
Met Asp Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Leu Trp
1               5                   10                  15


Leu Arg Gly Ala Arg Cys Ala Arg Asn Gly Asp His Cys Pro Leu Gly
            20                  25                  30


Pro Gly Arg Cys Cys Arg Leu His Thr Val Arg Ala Ser Leu Glu Asp
        35                  40                  45


Leu Gly Trp Ala Asp Trp Val Leu Ser Pro Arg Glu Val Gln Val Thr
    50                  55                  60


Met Cys Ile Gly Ala Cys Pro Ser Gln Asn Arg Thr Ala Asn Met His
65                  70                  75                  80


Ala Gln Ile Lys Thr Ser Leu His Arg Leu Lys Pro Asp Thr Val Pro
                85                  90                  95


Ala Pro Cys Cys Val Pro Ala Ser Tyr Asn Pro Met Val Leu Ile Gln
            100                 105                 110


Lys Thr Asp Thr Gly Val Ser Leu Gln Thr Tyr Asp Asp Leu Leu Ala
        115                 120                 125


Lys Asp Cys His Cys Ile
    130
```

<210> 88
<211> 134
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 88

```
Met Asp Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Leu Trp
1               5                  10                  15


Leu Arg Gly Ala Arg Cys Ala Arg Asn Gly Asp His Cys Pro Leu Gly
            20                  25                  30


Pro Gly Arg Cys Cys Arg Leu His Thr Val Arg Ala Ser Leu Glu Asp
        35                  40                  45


Leu Gly Trp Ala Asp Trp Val Leu Ser Pro Arg Glu Val Gln Val Thr
    50                  55                  60


Met Cys Ile Gly Ala Cys Pro Ser Gln Phe Asn Ala Thr Asn Met His
65                  70                  75                  80


Ala Gln Ile Lys Thr Ser Leu His Arg Leu Lys Pro Asp Thr Val Pro
                85                  90                  95


Ala Pro Cys Cys Val Pro Ala Ser Tyr Asn Pro Met Val Leu Ile Gln
            100                 105                 110


Lys Thr Asp Thr Gly Val Ser Leu Gln Thr Tyr Asp Asp Leu Leu Ala
        115                 120                 125


Lys Asp Cys His Cys Ile
    130
```

<210> 89
<211> 134
<212> PRT
<213> Artificial sequence

<220>

<223> synthetic polypeptide sequence

<400> 89

```
Met Asp Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Leu Trp
1               5                  10                  15


Leu Arg Gly Ala Arg Cys Ala Arg Asn Gly Asp His Cys Pro Leu Gly
            20                  25                  30


Pro Gly Arg Cys Cys Arg Leu His Thr Val Arg Ala Ser Leu Glu Asp
        35                  40                  45


Leu Gly Trp Ala Asp Trp Val Leu Ser Pro Arg Glu Val Gln Val Thr
    50                  55                  60


Met Cys Ile Gly Ala Cys Pro Ser Gln Phe Arg Ala Ala Asn Met His
65                  70                  75                  80


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


Ala Pro Cys Cys Val Pro Ala Ser Tyr Asn Pro Met Val Leu Ile Gln
            100                 105                 110


Lys Thr Asp Thr Gly Val Ser Leu Gln Thr Tyr Asp Asp Leu Leu Ala
        115                 120                 125


Lys Asp Cys His Cys Ile
    130
```

<210> 90
<211> 134
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 90

Met Asp Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Leu Trp
1 5 10 15

Leu Arg Gly Ala Arg Cys Ala Arg Asn Gly Asp His Cys Pro Leu Gly
20 25 30

Pro Gly Arg Cys Cys Arg Leu His Thr Val Arg Ala Ser Leu Glu Asp
35 40 45

Leu Gly Trp Ala Asp Trp Val Leu Ser Pro Arg Glu Val Gln Val Thr
50 55 60

Met Cys Ile Gly Ala Cys Pro Ser Gln Phe Arg Ala Ala Asn Met His
65 70 75 80

Ala Gln Ile Lys Thr Ser Asn His Thr Leu Lys Pro Asp Thr Val Pro
85 90 95

Ala Pro Cys Cys Val Pro Ala Ser Tyr Asn Pro Met Val Leu Ile Gln
100 105 110

Lys Thr Asp Thr Gly Val Ser Leu Gln Thr Tyr Asp Asp Leu Leu Ala
115 120 125

Lys Asp Cys His Cys Ile
130

<210> 91
<211> 134
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 91

```
Met Asp Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Leu Trp
1               5                   10                  15


Leu Arg Gly Ala Arg Cys Ala Arg Asn Gly Asp His Cys Pro Leu Gly
            20                  25                  30


Pro Gly Arg Cys Cys Arg Leu His Thr Val Arg Ala Ser Leu Glu Asp
        35                  40                  45


Leu Gly Trp Ala Asp Trp Val Leu Ser Pro Arg Glu Val Gln Val Thr
    50                  55                  60


Met Cys Ile Gly Ala Cys Pro Ser Gln Phe Arg Ala Ala Asn Met His
65                  70                  75                  80


Ala Gln Ile Lys Thr Ser Leu His Arg Leu Lys Pro Asp Thr Val Pro
                85                  90                  95


Ala Pro Cys Cys Val Pro Ala Asn Tyr Thr Pro Met Val Leu Ile Gln
            100                 105                 110


Lys Thr Asp Thr Gly Val Ser Leu Gln Thr Tyr Asp Asp Leu Leu Ala
        115                 120                 125


Lys Asp Cys His Cys Ile
    130


<210>  92
<211>  134
<212>  PRT
<213>  Artificial sequence

<220>
<223>  synthetic polypeptide sequence

<400>  92

Met Asp Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Leu Trp
1               5                   10                  15
```

```
Leu Arg Gly Ala Arg Cys Ala Arg Asn Gly Asp His Cys Pro Leu Gly
            20                  25                  30

Pro Gly Arg Cys Cys Arg Leu His Thr Val Arg Ala Ser Leu Glu Asp
        35                  40                  45

Leu Gly Trp Ala Asp Trp Val Leu Ser Pro Arg Glu Val Gln Val Thr
    50                  55                  60

Met Cys Ile Gly Ala Cys Pro Ser Gln Phe Arg Ala Ala Asn Met His
65                  70                  75                  80

Ala Gln Ile Lys Thr Ser Leu His Arg Leu Lys Pro Asp Thr Val Pro
                85                  90                  95

Ala Pro Cys Cys Val Pro Ala Ser Tyr Asn Pro Met Val Leu Ile Gln
            100                 105                 110

Asn Thr Thr Thr Gly Val Ser Leu Gln Thr Tyr Asp Asp Leu Leu Ala
        115                 120                 125

Lys Asp Cys His Cys Ile
    130


<210>  93
<211>  134
<212>  PRT
<213>  Artificial sequence

<220>
<223>  synthetic polypeptide sequence

<400>  93

Met Asp Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Leu Trp
1               5                   10                  15
```

```
Leu Arg Gly Ala Arg Cys Ala Arg Asn Gly Asp His Cys Pro Leu Gly
            20                  25                  30

Pro Gly Arg Cys Cys Arg Leu His Thr Val Arg Ala Ser Leu Glu Asp
        35                  40                  45

Leu Gly Trp Ala Asp Trp Val Leu Ser Pro Arg Glu Val Gln Val Thr
    50                  55                  60

Met Cys Ile Gly Ala Cys Pro Ser Gln Phe Arg Ala Ala Asn Met His
65                  70                  75                  80

Ala Gln Ile Lys Thr Ser Leu His Arg Leu Lys Pro Asp Thr Val Pro
                85                  90                  95

Ala Pro Cys Cys Val Pro Ala Ser Tyr Asn Pro Met Val Leu Ile Gln
            100                 105                 110

Lys Thr Asn Thr Thr Val Ser Leu Gln Thr Tyr Asp Asp Leu Leu Ala
        115                 120                 125

Lys Asp Cys His Cys Ile
    130
```

<210> 94
<211> 134
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 94

```
Met Asp Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Leu Trp
1               5                   10                  15

Leu Arg Gly Ala Arg Cys Ala Arg Asn Gly Asp His Cys Pro Leu Gly
            20                  25                  30
```

```
Pro Gly Arg Cys Cys Arg Leu His Thr Val Arg Ala Ser Leu Glu Asp
        35                  40                  45

Leu Gly Trp Ala Asp Trp Val Leu Ser Pro Arg Glu Val Gln Val Thr
    50                  55                  60

Met Cys Ile Gly Ala Cys Pro Ser Gln Phe Arg Ala Ala Asn Met His
65                  70                  75                  80

Ala Gln Ile Lys Thr Ser Leu His Arg Leu Lys Pro Asp Thr Val Pro
                85                  90                  95

Ala Pro Cys Cys Val Pro Ala Ser Tyr Asn Pro Met Val Leu Ile Gln
            100                 105                 110

Lys Thr Asp Asn Gly Thr Ser Leu Gln Thr Tyr Asp Asp Leu Leu Ala
        115                 120                 125

Lys Asp Cys His Cys Ile
    130


<210>  95
<211>  134
<212>  PRT
<213>  Artificial sequence

<220>
<223>  synthetic polypeptide sequence

<400>  95

Met Asp Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Leu Trp
1               5                   10                  15

Leu Arg Gly Ala Arg Cys Ala Arg Asn Gly Asp His Cys Pro Leu Gly
            20                  25                  30
```

Pro Gly Arg Cys Cys Arg Leu His Thr Val Arg Ala Ser Leu Glu Asp
35 40 45

Leu Gly Trp Ala Asp Trp Val Leu Ser Pro Arg Glu Val Gln Val Thr
50 55 60

Met Cys Ile Gly Ala Cys Pro Ser Gln Phe Arg Ala Ala Asn Met His
65 70 75 80

Ala Gln Ile Lys Thr Ser Leu His Arg Leu Lys Pro Asp Thr Val Pro
85 90 95

Ala Pro Cys Cys Val Pro Ala Ser Tyr Asn Pro Met Val Leu Ile Gln
100 105 110

Lys Thr Asp Thr Gly Asn Ser Thr Gln Thr Tyr Asp Asp Leu Leu Ala
115 120 125

Lys Asp Cys His Cys Ile
130

<210> 96
<211> 134
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 96

Met Asp Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Leu Trp
1 5 10 15

Leu Arg Gly Ala Arg Cys Ala Arg Asn Gly Asp His Cys Pro Leu Gly
20 25 30

Pro Gly Arg Cys Cys Arg Leu His Thr Val Arg Ala Ser Leu Glu Asp
35 40 45

```
Leu Gly Trp Ala Asp Trp Val Leu Ser Pro Arg Glu Val Gln Val Thr
    50                  55                  60

Met Cys Ile Gly Ala Cys Pro Ser Gln Phe Arg Ala Ala Asn Met His
65                  70                  75                  80

Ala Gln Ile Lys Thr Ser Leu His Arg Leu Lys Pro Asp Thr Val Pro
                85                  90                  95

Ala Pro Cys Cys Val Pro Ala Ser Tyr Asn Pro Met Val Leu Ile Gln
            100                 105                 110

Lys Thr Asp Thr Gly Val Asn Leu Thr Thr Tyr Asp Asp Leu Leu Ala
        115                 120                 125

Lys Asp Cys His Cys Ile
    130
```

<210> 97
<211> 134
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 97

```
Met Asp Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Leu Trp
1               5                   10                  15

Leu Arg Gly Ala Arg Cys Ala Arg Asn Gly Asp His Cys Pro Leu Gly
            20                  25                  30

Pro Gly Arg Cys Cys Arg Leu His Thr Val Arg Ala Ser Leu Glu Asp
        35                  40                  45
```

Leu Gly Trp Ala Asp Trp Val Leu Ser Pro Arg Glu Val Gln Val Thr
50 55 60

Met Cys Ile Gly Ala Cys Pro Ser Gln Phe Arg Ala Ala Asn Met His
65 70 75 80

Ala Gln Ile Lys Thr Ser Leu His Arg Leu Lys Pro Asp Thr Val Pro
85 90 95

Ala Pro Cys Cys Val Pro Ala Ser Tyr Asn Pro Met Val Leu Ile Gln
100 105 110

Lys Thr Asp Thr Gly Val Ser Leu Gln Thr Tyr Asp Asp Leu Leu Asn
115 120 125

Lys Thr Cys His Cys Ile
130

<210> 98
<211> 70
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic polynucleotide sequence

<400> 98
caccatggac atgagggtcc ccgctcagct cctggggctc ctgctactct ggctccgagg 60

tgccagatgt 70

<210> 99
<211> 48
<212> DNA
<213> Artificial sequence

<220>
<223> synthetic polynucleotide sequence

<400> 99
cctcgagcgg ccgctagctc atatgcagtg gcagtctttg gctaacaa 48

<210> 100
<211> 131
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 100

Met Asp Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Leu Trp
1 5 10 15

Leu Arg Gly Ala Arg Cys Gly Asp His Cys Pro Leu Gly Pro Gly Arg
20 25 30

Cys Cys Arg Leu His Thr Val Arg Ala Ser Leu Glu Asp Leu Gly Trp
35 40 45

Ala Asp Trp Val Leu Ser Pro Arg Glu Val Gln Val Thr Met Cys Ile
50 55 60

Gly Ala Cys Pro Ser Gln Phe Arg Ala Ala Asn Met His Ala Gln Ile
65 70 75 80

Lys Thr Ser Leu His Arg Leu Lys Pro Asp Thr Val Pro Ala Pro Cys
85 90 95

Cys Val Pro Ala Ser Tyr Asn Pro Met Val Leu Ile Gln Asn Thr Thr
100 105 110

Thr Gly Val Ser Leu Gln Thr Tyr Asp Asp Leu Leu Ala Lys Asp Cys
115 120 125

His Cys Ile
130

<210> 101
<211> 22
<212> PRT
<213> Artificial sequence

<220>
<223> synthetic polypeptide sequence

<400> 101

Met Asp Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Leu Trp
1 5 10 15

Leu Arg Gly Ala Arg Cys
20

<210> 102
<211> 48
<212> DNA
<213> Artificial sequence

<220>
<223> synthetic polynucleotide sequence

<400> 102
ctccgaggtg ccagatgtgc gcgcaacggg gaccactgtc cgctcggg 48

<210> 103
<211> 577
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic polypeptide

<400> 103

Asp Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu
1 5 10 15

Glu Asn Phe Lys Ala Leu Val Leu Ile Ala Phe Ala Gln Tyr Leu Gln
20 25 30

```
Gln Cys Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu
        35                  40                  45

Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys
    50                  55                  60

Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu
65                  70                  75                  80

Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro
                85                  90                  95

Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu
            100                 105                 110

Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His
        115                 120                 125

Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg
    130                 135                 140

Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg
145                 150                 155                 160

Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala
                165                 170                 175

Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser
            180                 185                 190

Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu
        195                 200                 205

Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro
    210                 215                 220
```

```
Lys Ala Glu Phe Ala Glu Val Ser Lys Leu Val Thr Asp Leu Thr Lys
225                 230                 235                 240


Val His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp
                245                 250                 255


Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser
            260                 265                 270


Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His
        275                 280                 285


Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser
    290                 295                 300


Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala
305                 310                 315                 320


Glu Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg
                325                 330                 335


Arg His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr
            340                 345                 350


Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu
        355                 360                 365


Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro
    370                 375                 380


Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu
385                 390                 395                 400


Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro
                405                 410                 415
```

```
Gln Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys
            420                 425                 430

Val Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys
        435                 440                 445

Ala Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His
    450                 455                 460

Glu Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser
465                 470                 475                 480

Leu Val Asn Arg Arg Pro Cys Phe Ser Ala Leu Glu Val Asp Glu Thr
                485                 490                 495

Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp
            500                 505                 510

Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala
        515                 520                 525

Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu
    530                 535                 540

Lys Ala Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys Cys Cys Lys
545                 550                 555                 560

Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Lys Lys Leu Val
                565                 570                 575

Ala
```

<210> 104
<211> 584
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 104

```
Asp Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu
1               5                   10                  15


Glu Asn Phe Lys Ala Leu Val Leu Ile Ala Phe Ala Gln Tyr Leu Gln
            20                  25                  30


Gln Cys Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu
        35                  40                  45


Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys
    50                  55                  60


Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu
65                  70                  75                  80


Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro
                85                  90                  95


Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu
            100                 105                 110


Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His
        115                 120                 125


Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg
    130                 135                 140


Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg
145                 150                 155                 160


Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala
                165                 170                 175
```

```
Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser
            180                 185                 190

Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu
        195                 200                 205

Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro
    210                 215                 220

Lys Ala Glu Phe Ala Glu Val Ser Lys Leu Val Thr Asp Leu Thr Lys
225                 230                 235                 240

Val His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp
                245                 250                 255

Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser
            260                 265                 270

Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His
        275                 280                 285

Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser
    290                 295                 300

Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala
305                 310                 315                 320

Glu Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg
                325                 330                 335

Arg His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr
            340                 345                 350

Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu
        355                 360                 365
```

```
Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro
    370                 375                 380

Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu
385                 390                 395                 400

Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro
                405                 410                 415

Gln Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys
            420                 425                 430

Val Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys
        435                 440                 445

Ala Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His
    450                 455                 460

Glu Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser
465                 470                 475                 480

Leu Val Asn Arg Arg Pro Cys Phe Ser Ala Leu Glu Val Asp Glu Thr
                485                 490                 495

Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp
            500                 505                 510

Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala
        515                 520                 525

Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu
    530                 535                 540

Lys Ala Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys Cys Cys Lys
545                 550                 555                 560
```

```
Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Lys Lys Leu Val
                565                 570                 575


Ala Ala Ser Gln Ala Ala Leu Gly
            580


<210>  105
<211>  586
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Synthetic polypeptide

<400>  105

Asp Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu
1               5                   10                  15


Glu Asn Phe Lys Ala Leu Val Leu Ile Ala Phe Ala Gln Tyr Leu Gln
            20                  25                  30


Gln Cys Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu
        35                  40                  45


Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys
    50                  55                  60


Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu
65                  70                  75                  80


Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro
                85                  90                  95


Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu
            100                 105                 110
```

```
Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His
        115                 120                 125

Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg
    130                 135                 140

Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg
145                 150                 155                 160

Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala
                165                 170                 175

Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser
            180                 185                 190

Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu
        195                 200                 205

Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro
    210                 215                 220

Lys Ala Glu Phe Ala Glu Val Ser Lys Leu Val Thr Asp Leu Thr Lys
225                 230                 235                 240

Val His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp
                245                 250                 255

Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser
            260                 265                 270

Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His
        275                 280                 285

Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser
    290                 295                 300
```

```
Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala
305                 310                 315                 320


Glu Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg
                325                 330                 335


Arg His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr
            340                 345                 350


Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu
        355                 360                 365


Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro
    370                 375                 380


Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu
385                 390                 395                 400


Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro
                405                 410                 415


Gln Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys
            420                 425                 430


Val Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys
        435                 440                 445


Ala Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His
    450                 455                 460


Glu Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser
465                 470                 475                 480


Leu Val Asn Arg Arg Pro Cys Phe Ser Ala Leu Glu Val Asp Glu Thr
                485                 490                 495
```

```
Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp
            500                 505                 510

Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala
        515                 520                 525

Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu
    530                 535                 540

Lys Ala Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys Cys Cys Lys
545                 550                 555                 560

Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Lys Lys Leu Val
                565                 570                 575

Ala Ala Ser Gln Ala Ala Leu Gly Leu Gly
            580                 585
```

<210> 106
<211> 602
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 106

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Asp Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu
1               5                   10                  15

Glu Asn Phe Lys Ala Leu Val Leu Ile Ala Phe Ala Gln Tyr Leu Gln
            20                  25                  30

Gln Cys Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu
        35                  40                  45

Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys
    50                  55                  60
```

```
Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu
65                  70                  75                  80

Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro
                85                  90                  95

Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu
            100                 105                 110

Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His
        115                 120                 125

Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg
    130                 135                 140

Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg
145                 150                 155                 160

Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala
                165                 170                 175

Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser
            180                 185                 190

Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu
        195                 200                 205

Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro
    210                 215                 220

Lys Ala Glu Phe Ala Glu Val Ser Lys Leu Val Thr Asp Leu Thr Lys
225                 230                 235                 240

Val His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp
                245                 250                 255
```

```
Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser
            260                 265                 270

Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His
        275                 280                 285

Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser
    290                 295                 300

Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala
305                 310                 315                 320

Glu Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg
                325                 330                 335

Arg His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr
            340                 345                 350

Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu
        355                 360                 365

Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro
    370                 375                 380

Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu
385                 390                 395                 400

Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro
                405                 410                 415

Gln Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys
            420                 425                 430

Val Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys
        435                 440                 445
```

```
Ala Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His
    450                 455                 460

Glu Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser
465                 470                 475                 480

Leu Val Asn Arg Arg Pro Cys Phe Ser Ala Leu Glu Val Asp Glu Thr
                485                 490                 495

Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp
            500                 505                 510

Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala
        515                 520                 525

Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu
    530                 535                 540

Lys Ala Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys Cys Cys Lys
545                 550                 555                 560

Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Lys Lys Leu Val
                565                 570                 575

Ala Ala Ser Gln Ala Ala Leu Gly Leu Gly Gly Gly Gly Ser Gly Gly
            580                 585                 590

Gly Gly Ser Gly Gly Gly Gly Ser Ala Arg
        595                 600


<210>  107
<211>  603
<212>  PRT
<213>  Artificial Sequence

<220>
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<223> Synthetic polypeptide

<400> 107

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Asp Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu
1               5                   10                  15

Glu Asn Phe Lys Ala Leu Val Leu Ile Ala Phe Ala Gln Tyr Leu Gln
            20                  25                  30

Gln Cys Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu
        35                  40                  45

Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys
    50                  55                  60

Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu
65                  70                  75                  80

Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro
                85                  90                  95

Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu
            100                 105                 110

Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His
        115                 120                 125

Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg
    130                 135                 140

Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg
145                 150                 155                 160

Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala
                165                 170                 175
```

```
Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser
            180                 185                 190

Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu
        195                 200                 205

Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro
    210                 215                 220

Lys Ala Glu Phe Ala Glu Val Ser Lys Leu Val Thr Asp Leu Thr Lys
225                 230                 235                 240

Val His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp
                245                 250                 255

Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser
            260                 265                 270

Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His
        275                 280                 285

Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser
    290                 295                 300

Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala
305                 310                 315                 320

Glu Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg
                325                 330                 335

Arg His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr
            340                 345                 350

Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu
        355                 360                 365
```

```
Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro
    370                 375                 380

Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu
385                 390                 395                 400

Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro
                405                 410                 415

Gln Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys
            420                 425                 430

Val Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys
        435                 440                 445

Ala Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His
    450                 455                 460

Glu Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser
465                 470                 475                 480

Leu Val Asn Arg Arg Pro Cys Phe Ser Ala Leu Glu Val Asp Glu Thr
                485                 490                 495

Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp
            500                 505                 510

Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala
        515                 520                 525

Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu
    530                 535                 540

Lys Ala Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys Cys Cys Lys
545                 550                 555                 560
```

Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Lys Lys Leu Val
565 570 575

Ala Ala Ser Gln Ala Ala Leu Gly Leu Gly Gly Gly Gly Ser Gly Gly
580 585 590

Gly Gly Ser Gly Gly Gly Gly Ser Ala Arg Asn
595 600

<210> 108
<211> 405
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide

<400> 108
atggacatga gggtccccgc tcagctcctg gggctcctgc tactctggct ccgaggtgcc 60

agatgtgcgc gcaacgggac tcactgtccg ctcgggcccg ggcgttgctg ccgtctgcac 120

acggtcaacg cgtcgctgga agacctgggc tgggccgatt gggtgctgtc gccacgggag 180

gtgcaagtga ccatgtgcat cggcgcgtgc ccgagccagt tccgggcggc aaacatgcac 240

gcgcagatca agacgagcct gcaccgcctg aagcccgaca cggtgccagc gccctgctgc 300

gtgcccgcca gctacaatcc catggtgctc attcaaaaga ccgacaccgg ggtgtcgctc 360

cagacctatg atgacttgtt agccaaagac tgccactgca tatga 405

<210> 109
<211> 405
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic oligonucleotide

<400> 109
atggacatga gggtccccgc tcagctcctg gggctcctgc tactctggct ccgaggtgcc 60

agatgtgcgc gcaacgggga ccactgtccg ctcgggcccg ggcgttgctg caatctgacc 120

acggtccgcg cgtcgctgga agacctgggc tgggccgatt gggtgctgtc gccacgggag 180

gtgcaagtga ccatgtgcat cggcgcgtgc ccgagccagt tccgggcggc aaacatgcac 240

gcgcagatca agacgagcct gcaccgcctg aagcccgaca cggtgccagc gccctgctgc 300

gtgcccgcca gctacaatcc catggtgctc attcaaaaga ccgacaccgg ggtgtcgctc 360

cagacctatg atgacttgtt agccaaagac tgccactgca tatga 405

<210> 110
<211> 405
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic oligonucleotide

<400> 110
atggacatga gggtccccgc tcagctcctg gggctcctgc tactctggct ccgaggtgcc 60

agatgtgcgc gcaacgggga ccactgtccg ctcgggcccg ggcgttgctg ccgtctgcac 120

acggtccgcg cgaacctgac ggacctgggc tgggccgatt gggtgctgtc gccacgggag 180

gtgcaagtga ccatgtgcat cggcgcgtgc ccgagccagt tccgggcggc aaacatgcac 240

gcgcagatca agacgagcct gcaccgcctg aagcccgaca cggtgccagc gccctgctgc 300

gtgcccgcca gctacaatcc catggtgctc attcaaaaga ccgacaccgg ggtgtcgctc 360

cagacctatg atgacttgtt agccaaagac tgccactgca tatga 405

<210> 111
<211> 405
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic oligonucleotide

<400> 111
atggacatga gggtccccgc tcagctcctg gggctcctgc tactctggct ccgaggtgcc 60

agatgtgcgc gcaacgggga ccactgtccg ctcgggcccg ggcgttgctg ccgtctgcac 120

acggtccgcg cgtcgaatga aaccctgggc tgggccgatt gggtgctgtc gccacgggag 180

gtgcaagtga ccatgtgcat cggcgcgtgc ccgagccagt tccgggcggc aaacatgcac 240

gcgcagatca agacgagcct gcaccgcctg aagcccgaca cggtgccagc gccctgctgc 300

gtgcccgcca gctacaatcc catggtgctc attcaaaaga ccgacaccgg ggtgtcgctc 360

cagacctatg atgacttgtt agccaaagac tgccactgca tatga 405

<210> 112
<211> 405
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic oligonucleotide

<400> 112
atggacatga gggtccccgc tcagctcctg gggctcctgc tactctggct ccgaggtgcc 60

agatgtgcgc gcaacgggga ccactgtccg ctcgggcccg ggcgttgctg ccgtctgcac 120

acggtccgcg cgtcgctgga agacctgggc tgggccgatt gggtgctgtc gccacgggag 180

gtgcaagtga ccatgtgcat cggcgcgtgc ccgaaccaga cccgggcggc aaacatgcac 240

gcgcagatca agacgagcct gcaccgcctg aagcccgaca cggtgccagc gccctgctgc 300

gtgcccgcca gctacaatcc catggtgctc attcaaaaga ccgacaccgg ggtgtcgctc 360

cagacctatg atgacttgtt agccaaagac tgccactgca tatga 405

<210> 113
<211> 405
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic oligonucleotide

<400> 113
atggacatga gggtccccgc tcagctcctg gggctcctgc tactctggct ccgaggtgcc 60

agatgtgcgc gcaacgggga ccactgtccg ctcgggcccg ggcgttgctg ccgtctgcac 120

acggtccgcg cgtcgctgga agacctgggc tgggccgatt gggtgctgtc gccacgggag 180

gtgcaagtga ccatgtgcat cggcgcgtgc ccgagcaact tcacggcggc aaacatgcac 240

gcgcagatca agacgagcct gcaccgcctg aagcccgaca cggtgccagc gccctgctgc 300

gtgcccgcca gctacaatcc catggtgctc attcaaaaga ccgacaccgg ggtgtcgctc 360

cagacctatg atgacttgtt agccaaagac tgccactgca tatga 405

<210> 114
<211> 405
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic oligonucleotide

<400> 114
atggacatga gggtccccgc tcagctcctg gggctcctgc tactctggct ccgaggtgcc 60

agatgtgcgc gcaacgggga ccactgtccg ctcgggcccg ggcgttgctg ccgtctgcac 120

acggtccgcg cgtcgctgga agacctgggc tgggccgatt gggtgctgtc gccacgggag 180

gtgcaagtga ccatgtgcat cggcgcgtgc ccgagccaga accggacggc aaacatgcac 240

gcgcagatca agacgagcct gcaccgcctg aagcccgaca cggtgccagc gccctgctgc 300

gtgcccgcca gctacaatcc catggtgctc attcaaaaga ccgacaccgg ggtgtcgctc 360

cagacctatg atgacttgtt agccaaagac tgccactgca tatga 405

<210> 115
<211> 405
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic oligonucleotide

<400> 115
atggacatga gggtccccgc tcagctcctg gggctcctgc tactctggct ccgaggtgcc 60

agatgtgcgc gcaacgggga ccactgtccg ctcgggcccg ggcgttgctg ccgtctgcac 120

acggtccgcg cgtcgctgga agacctgggc tgggccgatt gggtgctgtc gccacgggag 180

gtgcaagtga ccatgtgcat cggcgcgtgc ccgagccagt tcaacgcgac gaacatgcac 240

gcgcagatca agacgagcct gcaccgcctg aagcccgaca cggtgccagc gccctgctgc 300

gtgcccgcca gctacaatcc catggtgctc attcaaaaga ccgacaccgg ggtgtcgctc 360

cagacctatg atgacttgtt agccaaagac tgccactgca tatga 405

<210> 116
<211> 405
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic oligonucleotide

<400> 116
atggacatga gggtccccgc tcagctcctg gggctcctgc tactctggct ccgaggtgcc 60

agatgtgcgc gcaacgggga ccactgtccg ctcgggcccg ggcgttgctg ccgtctgcac 120

acggtccgcg cgtcgctgga agacctgggc tgggccgatt gggtgctgtc gccacgggag 180

gtgcaagtga ccatgtgcat cggcgcgtgc ccgagccagt tccgggcggc aaacatgcac 240

gcgcagatca agacgaacct gacgcgcctg aagcccgaca cggtgccagc gccctgctgc 300

gtgcccgcca gctacaatcc catggtgctc attcaaaaga ccgacaccgg ggtgtcgctc 360

cagacctatg atgacttgtt agccaaagac tgccactgca tatga 405

<210> 117
<211> 402
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic oligonucleotide

<400> 117
atggacatga gggtccccgc tcagctcctg gggctcctgc tactctggct ccgaggtgcc 60

agatgtgcgc gcaacgggga ccactgtccg ctcgggcccg ggcgttgctg ccgtctgcac 120

acggtccgcg cgtcgctgga agacctgggc tgggccgatt gggtgctgtc gccacgggag 180

gtgcaagtga ccatgtgcat cggcgcgtgc ccgagccagt tccgggcggc aaacatgcac 240

gcgcagatca agacgagcaa ccacaccctg aagcccgaca cggtgccagc gccctgctgc 300

gtgcccgcca gctacaatcc catggtgctc attcaaaaga ccgacaccgg ggtgtcgctc 360

cagacctatg atgacttgtt agccaaagac tgccactgca ta 402

<210> 118
<211> 405
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic oligonucleotide

<400> 118
atggacatga gggtccccgc tcagctcctg gggctcctgc tactctggct ccgaggtgcc 60

agatgtgcgc gcaacgggga ccactgtccg ctcgggcccg ggcgttgctg ccgtctgcac 120

acggtccgcg cgtcgctgga agacctgggc tgggccgatt gggtgctgtc gccacgggag 180

gtgcaagtga ccatgtgcat cggcgcgtgc ccgagccagt tccgggcggc aaacatgcac 240

gcgcagatca agacgagcct gcaccgcctg aagcccgaca cggtgccagc gccctgctgc 300

gtgcccgcca actacactcc catggtgctc attcaaaaga ccgacaccgg ggtgtcgctc 360

cagacctatg atgacttgtt agccaaagac tgccactgca tatga 405

<210> 119
<211> 405
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic oligonucleotide

<400> 119
atggacatga gggtccccgc tcagctcctg gggctcctgc tactctggct ccgaggtgcc 60

agatgtgcgc gcaacgggga ccactgtccg ctcgggcccg ggcgttgctg ccgtctgcac 120

acggtccgcg cgtcgctgga agacctgggc tgggccgatt gggtgctgtc gccacgggag 180

gtgcaagtga ccatgtgcat cggcgcgtgc ccgagccagt tccgggcggc aaacatgcac 240

gcgcagatca agacgagcct gcaccgcctg aagcccgaca cggtgccagc gccctgctgc 300

gtgcccgcca gctacaatcc catggtgctc attcaaaaca ccaccaccgg ggtgtcgctc 360

cagacctatg atgacttgtt agccaaagac tgccactgca tatga 405

<210> 120
<211> 405
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic oligonucleotide

<400> 120
atggacatga gggtccccgc tcagctcctg gggctcctgc tactctggct ccgaggtgcc 60

agatgtgcgc gcaacgggga ccactgtccg ctcgggcccg ggcgttgctg ccgtctgcac 120

acggtccgcg cgtcgctgga agacctgggc tgggccgatt gggtgctgtc gccacgggag 180

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Pro Gly Arg Cys Cys Arg Leu His Thr Val Arg Ala Ser Leu Glu Asp
35 40 45

Leu Gly Trp Ala Asp Trp Val Leu Ser Pro Arg Glu Val Gln Val Thr
50 55 60

Met Cys Ile Gly Ala Cys Pro Ser Gln Phe Arg Ala Ala Asn Met His
65 70 75 80

Ala Gln Ile Lys Thr Ser Leu His Arg Leu Lys Pro Asp Thr Val Pro
85 90 95

Ala Pro Cys Cys Val Pro Ala Ser Tyr Asn Pro Met Val Leu Ile Gln
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