SEQUENCE LISTING

<110> Biond Biologics Ltd.

<120> METHODS AND COMPOSITIONS FOR DECREASING SOLUBLE IMMUNE RECEPTOR

<130> BDB-P-003-PCT

<150> 62/643334
<151> 2018-03-15

<150> 62/643355
<151> 2018-03-15

<150> 62/774254
<151> 2018-12-02

<160> 56

<170> PatentIn version 3.5

<210> 1
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<213> Homo sapiens

<400> 1

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Met Leu Arg Leu Leu Leu Ala Leu Asn Leu Phe Pro Ser Ile Gln Val
1               5                  10                  15


Thr Gly Asn Lys Ile Leu Val Lys Gln Ser Pro Met Leu Val Ala Tyr
            20                  25                  30


Asp Asn Ala Val Asn Leu Ser Cys Lys Tyr Ser Tyr Asn Leu Phe Ser
        35                  40                  45


Arg Glu Phe Arg Ala Ser Leu His Lys Gly Leu Asp Ser Ala Val Glu
    50                  55                  60


Val Cys Val Val Tyr Gly Asn Tyr Ser Gln Gln Leu Gln Val Tyr Ser
65                  70                  75                  80


Lys Thr Gly Phe Asn Cys Asp Gly Lys Leu Gly Asn Glu Ser Val Thr
                85                  90                  95
```

```
Phe Tyr Leu Gln Asn Leu Tyr Val Asn Gln Thr Asp Ile Tyr Phe Cys
            100                 105                 110


Lys Ile Glu Val Met Tyr Pro Pro Pro Tyr Leu Asp Asn Glu Lys Ser
        115                 120                 125


Asn Gly Thr Ile Ile His Val Lys Gly Lys His Leu Cys Pro Ser Pro
    130                 135                 140


Leu Phe Pro Gly Pro Ser Lys Pro Phe Trp Val Leu Val Val Val Gly
145                 150                 155                 160


Gly Val Leu Ala Cys Tyr Ser Leu Leu Val Thr Val Ala Phe Ile Ile
                165                 170                 175


Phe Trp Val Arg Ser Lys Arg Ser Arg Leu Leu His Ser Asp Tyr Met
            180                 185                 190


Asn Met Thr Pro Arg Arg Pro Gly Pro Thr Arg Lys His Tyr Gln Pro
        195                 200                 205


Tyr Ala Pro Pro Arg Asp Phe Ala Ala Tyr Arg Ser
    210                 215                 220


<210>  2
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<213>  Homo sapiens

<400>  2

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


Ala Val Asn Leu Ser Cys Lys Tyr Ser Tyr Asn Leu Phe Ser Arg Glu
            20                  25                  30


Phe Arg Ala Ser Leu His Lys Gly Leu Asp Ser Ala Val Glu Val Cys
```

```
        35                  40                  45

Val Val Tyr Gly Asn Tyr Ser Gln Gln Leu Gln Val Tyr Ser Lys Thr
    50                  55                  60

Gly Phe Asn Cys Asp Gly Lys Leu Gly Asn Glu Ser Val Thr Phe Tyr
65                  70                  75                  80

Leu Gln Asn Leu Tyr Val Asn Gln Thr Asp Ile Tyr Phe Cys Lys Ile
                85                  90                  95

Glu Val Met Tyr Pro Pro Pro Tyr Leu Asp Asn Glu Lys Ser Asn Gly
            100                 105                 110

Thr Ile Ile His Val Lys Gly Lys His Leu Cys Pro Ser Pro Leu Phe
        115                 120                 125

Pro Gly Pro Ser Lys Pro Phe Trp Val Leu Val Val Val Gly Gly Val
    130                 135                 140

Leu Ala Cys Tyr Ser Leu Leu Val Thr Val Ala Phe Ile Ile Phe Trp
145                 150                 155                 160

Val Arg Ser Lys Arg Ser Arg Leu Leu His Ser Asp Tyr Met Asn Met
                165                 170                 175

Thr Pro Arg Arg Pro Gly Pro Thr Arg Lys His Tyr Gln Pro Tyr Ala
            180                 185                 190

Pro Pro Arg Asp Phe Ala Ala Tyr Arg Ser
        195                 200
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aagtattcct acaatctctt ctcaagggag ttccgggcat cccttcacaa aggactggat 180

agtgctgtgg aagtctgtgt tgtatatggg aattactccc agcagcttca ggtttactca 240

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aatttgtatg ttaaccaaac agatatttac ttctgcaaaa ttgaagttat gtatcctcct 360

ccttacctag acaatgagaa gagcaatgga accattatcc atgtgaaagg gaaacacctt 420

tgtccaagtc ccctatttcc cggaccttct aagccctttt gggtgctggt ggtggttggt 480

ggagtcctgg cttgctatag cttgctagta acagtggcct ttattatttt ctgggtgagg 540

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tga 663

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Phe Trp Val Leu Val Val Val Gly Gly Val Leu Ala Cys Tyr Ser Leu
1 5 10 15

Leu Val Thr Val Ala Phe Ile Ile Phe Trp Val
20 25

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<213> Homo sapiens

<400> 5

Met Leu Arg Leu Leu Leu Ala Leu Asn Leu Phe Pro Ser Ile Gln Val
1 5 10 15

```
Thr Gly Asn Lys Ile Leu Val Lys Gln Ser Pro Met Leu Val Ala Tyr
            20                  25                  30

Asp Asn Ala Val Asn Leu Ser Cys Lys Tyr Ser Tyr Asn Leu Phe Ser
        35                  40                  45

Arg Glu Phe Arg Ala Ser Leu His Lys Gly Leu Asp Ser Ala Val Glu
    50                  55                  60

Val Cys Val Val Tyr Gly Asn Tyr Ser Gln Gln Leu Gln Val Tyr Ser
65                  70                  75                  80

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

Phe Tyr Leu Gln Asn Leu Tyr Val Asn Gln Thr Asp Ile Tyr Phe Cys
            100                 105                 110

Lys Ile Glu Val Met Tyr Pro Pro Pro Tyr Leu Asp Asn Glu Lys Ser
        115                 120                 125

Asn Gly Thr Ile Ile His Val Lys Gly Glu Glu
    130                 135
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<210> 6
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<213> Homo sapiens

<400> 6

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

Ala Val Asn Leu Ser Cys Lys Tyr Ser Tyr Asn Leu Phe Ser Arg Glu
            20                  25                  30

Phe Arg Ala Ser Leu His Lys Gly Leu Asp Ser Ala Val Glu Val Cys
        35                  40                  45
```

```
Val Val Tyr Gly Asn Tyr Ser Gln Gln Leu Gln Val Tyr Ser Lys Thr
    50                  55                  60

Gly Phe Asn Cys Asp Gly Lys Leu Gly Asn Glu Ser Val Thr Phe Tyr
65                  70                  75                  80

Leu Gln Asn Leu Tyr Val Asn Gln Thr Asp Ile Tyr Phe Cys Lys Ile
                85                  90                  95

Glu Val Met Tyr Pro Pro Pro Tyr Leu Asp Asn Glu Lys Ser Asn Gly
            100                 105                 110

Thr Ile Ile His Val Lys Gly Glu Glu
        115                 120
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<400> 7

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aagtattcct acaatctctt ctcaagggag ttccgggcat cccttcacaa aggactggat      180

agtgctgtgg aagtctgtgt tgtatatggg aattactccc agcagcttca ggtttactca      240

aaaacggggt tcaactgtga tgggaaattg ggcaatgaat cagtgacatt ctacctccag      300

aatttgtatg ttaaccaaac agatatttac ttctgcaaaa ttgaagttat gtatcctcct      360

ccttacctag acaatgagaa gagcaatgga accattatcc atgtgaaagg tgaggagtaa      420

gaggagcagg ctcctgcaca gtgactacat gaacatgact ccccgccgcc ccgggcccac      480

ccgcaagcat taccagccct atgccccacc acgcgacttc gcagcctatc gctcctga        538
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<210> 8
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Met Leu Val Ala Tyr Asp Asn Ala Val Asn Leu Ser Cys Lys Tyr Ser
1 5 10 15

Tyr Asn Leu Phe Ser Arg Glu Phe Arg Ala Ser Leu His Lys Gly Leu
20 25 30

Asp Ser Ala Val Glu Val Cys Val Val Tyr Gly Asn Tyr Ser Gln Gln
35 40 45

Leu Gln Val Tyr Ser Lys Thr Gly Phe Asn Cys Asp Gly Lys Leu Gly
50 55 60

Asn Glu Ser Val Thr Phe Tyr Leu Gln Asn Leu Tyr Val Asn Gln Thr
65 70 75 80

Asp Ile Tyr Phe Cys Lys Ile Glu Val Met Tyr Pro Pro Pro Tyr Leu
85 90 95

Asp Asn Glu Lys Ser Asn Gly Thr Ile Ile His Val Lys Gly
100 105 110

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Gly Lys His Leu Cys Pro Ser Pro Leu Phe Pro Gly Pro Ser Lys Pro
1 5 10 15

<210> 10
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<212> PRT
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His Val Lys Gly Lys His Leu Cys Pro Ser Pro Leu Phe Pro Gly Pro

1 5 10 15

Ser Lys Pro

<210> 11
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<210> 12
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<400> 12

Gly Tyr Thr Leu Thr Asn Tyr
1 5

<210> 13
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<220>
<223> Synthetic

<400> 13

Asn Thr Tyr Thr Gly Lys
1 5

<210> 14
<211> 9
<212> PRT
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<220>

<223> Synthetic

<400> 14

Gly Asp Ala Asn Gln Gln Phe Ala Tyr
1 5

<210> 15
<211> 11
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 15

Lys Ala Ser Gln Asp Ile Asn Ser Tyr Leu Ser
1 5 10

<210> 16
<211> 7
<212> PRT
<213> Artificial

<220>
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<400> 16

Arg Ala Asn Arg Leu Val Asp
1 5

<210> 17
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 17

Leu Gln Tyr Asp Glu Phe Pro Pro Thr
1 5

<210> 18
<211> 7
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 18

Gly Tyr Thr Phe Thr Ser Tyr
1   5

<210> 19
<211> 6
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 19

Tyr Pro Gly Asp Gly Asp
1   5

<210> 20
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<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 20

Asn Tyr Arg Tyr Ser Ser Phe Gly Tyr
1   5

<210> 21
<211> 17
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 21

Lys Ser Ser Gln Ser Leu Leu Asn Ser Gly Asn Gln Lys Asn Tyr Leu
1 5 10 15

Thr

<210> 22
<211> 7
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 22

Trp Ala Ser Thr Arg Glu Ser
1 5

<210> 23
<211> 9
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<213> Artificial

<220>
<223> Synthetic

<400> 23

Gln Ser Asp Tyr Ser Tyr Pro Leu Thr
1 5

<210> 24
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<223> Synthetic

<400> 24

Gly Tyr Thr Phe Thr Asp Tyr
1 5

<210> 25
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<400> 25

Asn Pro Asn Tyr Asp Ser
1   5

<210> 26
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<212> PRT
<213> Artificial

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<400> 26

Ser Ser Pro Tyr Tyr Asp Ser Asn His Phe Asp Tyr
1   5   10

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<213> Artificial

<220>
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<400> 27

Ser Ala Arg Ser Ser Ile Asn Tyr Met His
1   5   10

<210> 28
<211> 7
<212> PRT
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<223> Synthetic

<400> 28

Asp Thr Ser Lys Leu Ala Ser
1   5

<210> 29
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 29

His Gln Arg Asn Ser Tyr Pro Phe Thr
1   5

<210> 30
<211> 10
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 30

Gly Phe Thr Phe Ser Ser Tyr Tyr Met Ser
1   5   10

<210> 31
<211> 17
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 31

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

Gly

<210> 32
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<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 32

Ile His Trp Pro Tyr Tyr Phe Asp Ser
1   5

<210> 33
<211> 10
<212> PRT
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<220>
<223> Synthetic

<400> 33

Arg Ala Ser Ser Ser Val Ser Tyr Met Asn
1   5   10

<210> 34
<211> 7
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 34

Ala Thr Ser Asp Leu Ala Ser
1   5

<210> 35
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 35

Gln Gln Trp Ser Ser His Pro Pro Thr
1   5

<210> 36
<211> 15
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 36

Lys Gly Lys His Leu Cys Pro Ser Pro Leu Phe Pro Gly Pro Ser
1   5   10   15

<210> 37
<211> 134
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 37

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

Ala Val Asn Leu Ser Cys Lys Tyr Ser Tyr Asn Leu Phe Ser Arg Glu
            20   25   30

Phe Arg Ala Ser Leu His Lys Gly Leu Asp Ser Ala Val Glu Val Cys
        35   40   45

Val Val Tyr Gly Asn Tyr Ser Gln Gln Leu Gln Val Tyr Ser Lys Thr
    50   55   60

Gly Phe Asn Cys Asp Gly Lys Leu Gly Asn Glu Ser Val Thr Phe Tyr
65 70 75 80

Leu Gln Asn Leu Tyr Val Asn Gln Thr Asp Ile Tyr Phe Cys Lys Ile
85 90 95

Glu Val Met Tyr Pro Pro Pro Tyr Leu Asp Asn Glu Lys Ser Asn Gly
100 105 110

Thr Ile Ile His Val Lys Gly Lys His Leu Cys Pro Ser Pro Leu Phe
115 120 125

Pro Gly Pro Ser Lys Pro
130

<210> 38
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<212> DNA
<213> Artificial

<220>
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<400> 38
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<210> 39
<211> 27
<212> DNA
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<220>
<223> Synthetic

<400> 39
tcaggagcga taggctgcga agtcgcg 27

<210> 40
<211> 17
<212> PRT
<213> Artificial

<220>

<223> Synthetic

<400> 40

Gly Lys His Leu Cys Pro Ser Pro Leu Phe Pro Gly Pro Ser Lys Pro
1   5   10   15

Lys

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<211> 117
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 41

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

Thr Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Leu Thr Asn Tyr
            20   25   30

Gly Met Asn Trp Val Lys Gln Ala Pro Gly Lys Gly Leu Lys Trp Met
        35   40   45

Gly Trp Ile Asn Thr Tyr Thr Gly Lys Pro Thr Tyr Val Asp Asp Phe
    50   55   60

Lys Gly Arg Phe Ala Phe Ser Leu Glu Thr Ser Ala Ser Thr Ala Tyr
65   70   75   80

Leu Gln Ile Asn Asn Leu Lys Asn Glu Asp Thr Ala Thr Tyr Phe Cys
                85   90   95

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

Leu Val Thr Val Ser
        115

<210> 42
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<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 42

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

Thr Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Leu Thr Asn Tyr
            20   25   30

Gly Met Asn Trp Val Lys Gln Ala Pro Gly Lys Gly Leu Lys Trp Met
        35   40   45

Gly Trp Ile Asn Thr Tyr Thr Gly Lys Pro Thr Tyr Val Asp Asp Phe
    50   55   60

Lys Gly Arg Phe Ala Phe Ser Leu Glu Thr Ser Ala Ser Thr Ala Tyr
65   70   75   80

Leu Gln Ile Asn Asn Leu Lys Asn Glu Asp Thr Ala Thr Tyr Phe Cys
                85   90   95

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Glu Lys Ser Leu Ser His Ser Pro Gly Lys
        435                 440
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<210> 43
<211> 107
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 43

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

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

Leu Ser Trp Phe Gln Gln Lys Pro Gly Lys Ser Pro Lys Thr Leu Ile
        35                  40                  45

Tyr Arg Ala Asn Arg Leu Val Asp Gly Val Pro Ser Arg Phe Ser Gly
    50                  55                  60
```

```
Ser Gly Ser Gly Gln Asp Tyr Ser Leu Thr Ile Ser Ser Leu Glu Tyr
65                  70                  75                  80


Asp Asp Met Gly Ile Tyr Tyr Cys Leu Gln Tyr Asp Glu Phe Pro Pro
                85                  90                  95


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


<210>  44
<211>  214
<212>  PRT
<213>  Artificial

<220>
<223>  Synthetic

<400>  44

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


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


Leu Ser Trp Phe Gln Gln Lys Pro Gly Lys Ser Pro Lys Thr Leu Ile
        35                  40                  45


Tyr Arg Ala Asn Arg Leu Val Asp Gly Val Pro Ser Arg Phe Ser Gly
    50                  55                  60


Ser Gly Ser Gly Gln Asp Tyr Ser Leu Thr Ile Ser Ser Leu Glu Tyr
65                  70                  75                  80


Asp Asp Met Gly Ile Tyr Tyr Cys Leu Gln Tyr Asp Glu Phe Pro Pro
                85                  90                  95


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

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


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


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


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


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


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


Phe Asn Arg Asn Glu Cys
    210
```

<210> 45
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<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 45

```
Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Arg Pro Gly Ala
1               5                   10                  15


Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
            20                  25                  30


Trp Met Gln Trp Ile Lys Lys Arg Pro Gly Gln Gly Leu Glu Trp Ile
        35                  40                  45
```

```
Gly Ala Ile Tyr Pro Gly Asp Gly Asp Thr Arg Tyr Thr Gln Lys Phe
    50                  55                  60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Thr Thr Ala Tyr
65                  70                  75                  80

Met Gln Leu Ser Ser Leu Ala Ser Glu Asp Ser Ala Val Tyr Phe Cys
                85                  90                  95

Ala Arg Asn Tyr Arg Tyr Ser Ser Phe Gly Tyr Trp Gly Gln Gly Thr
            100                 105                 110

Leu Val Thr Val Ser Ala
        115
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<210> 46
<211> 454
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 46

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Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Arg Pro Gly Ala
1               5                   10                  15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
            20                  25                  30

Trp Met Gln Trp Ile Lys Lys Arg Pro Gly Gln Gly Leu Glu Trp Ile
        35                  40                  45

Gly Ala Ile Tyr Pro Gly Asp Gly Asp Thr Arg Tyr Thr Gln Lys Phe
    50                  55                  60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Thr Thr Ala Tyr
65                  70                  75                  80
```

```
Met Gln Leu Ser Ser Leu Ala Ser Glu Asp Ser Ala Val Tyr Phe Cys
                85                  90                  95

Ala Arg Asn Tyr Arg Tyr Ser Ser Phe Gly Tyr Trp Gly Gln Gly Thr
            100                 105                 110

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

Leu Ala Pro Gly Cys Gly Asp Thr Thr Gly Ser Ser Val Thr Leu Gly
    130                 135                 140

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

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

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

Trp Pro Ser Gln Thr Val Thr Cys Ser Val Ala His Pro Ala Ser Ser
        195                 200                 205

Thr Thr Val Asp Lys Lys Leu Glu Pro Ser Gly Pro Ile Ser Thr Ile
    210                 215                 220

Asn Pro Cys Pro Pro Cys Lys Glu Cys His Lys Cys Pro Ala Pro Asn
225                 230                 235                 240

Leu Glu Gly Gly Pro Ser Val Phe Ile Phe Pro Pro Asn Ile Lys Asp
                245                 250                 255

Val Leu Met Ile Ser Leu Thr Pro Lys Val Thr Cys Val Val Val Asp
            260                 265                 270
```

```
Val Ser Glu Asp Asp Pro Asp Val Gln Ile Ser Trp Phe Val Asn Asn
        275                 280                 285

Val Glu Val His Thr Ala Gln Thr Gln Thr His Arg Glu Asp Tyr Asn
    290                 295                 300

Ser Thr Ile Arg Val Val Ser Thr Leu Pro Ile Gln His Gln Asp Trp
305                 310                 315                 320

Met Ser Gly Lys Glu Phe Lys Cys Lys Val Asn Asn Lys Asp Leu Pro
                325                 330                 335

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

Pro Gln Val Tyr Ile Leu Pro Pro Pro Ala Glu Gln Leu Ser Arg Lys
        355                 360                 365

Asp Val Ser Leu Thr Cys Leu Val Val Gly Phe Asn Pro Gly Asp Ile
    370                 375                 380

Ser Val Glu Trp Thr Ser Asn Gly His Thr Glu Glu Asn Tyr Lys Asp
385                 390                 395                 400

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

Leu Asn Met Lys Thr Ser Lys Trp Glu Lys Thr Asp Ser Phe Ser Cys
            420                 425                 430

Asn Val Arg His Glu Gly Leu Lys Asn Tyr Tyr Leu Lys Lys Thr Ile
        435                 440                 445

Ser Arg Ser Pro Gly Lys
    450
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<210> 47
<211> 113

<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 47

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

Glu Lys Val Thr Leu Ser Cys Lys Ser Ser Gln Ser Leu Leu Asn Ser
            20   25   30

Gly Asn Gln Lys Asn Tyr Leu Thr Trp Tyr Gln Gln Lys Pro Gly Gln
        35   40   45

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

Pro Asp Arg Phe Thr Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
65   70   75   80

Ile Ser Ser Val Gln Ala Glu Asp Leu Ala Val Tyr Tyr Cys Gln Ser
                85   90   95

Asp Tyr Ser Tyr Pro Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu
            100   105   110

Lys

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

Glu Lys Val Thr Leu Ser Cys Lys Ser Ser Gln Ser Leu Leu Asn Ser
            20                  25                  30

Gly Asn Gln Lys Asn Tyr Leu Thr Trp Tyr Gln Gln Lys Pro Gly Gln
        35                  40                  45

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

Pro Asp Arg Phe Thr Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
65                  70                  75                  80

Ile Ser Ser Val Gln Ala Glu Asp Leu Ala Val Tyr Tyr Cys Gln Ser
                85                  90                  95

Asp Tyr Ser Tyr Pro Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu
            100                 105                 110

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

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

Phe Tyr Pro Lys Asp Ile Asn Val Lys Trp Lys Ile Asp Gly Ser Glu
145                 150                 155                 160

Arg Gln Asn Gly Val Leu Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp
                165                 170                 175

Ser Thr Tyr Ser Met Ser Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr
            180                 185                 190

Glu Arg His Asn Ser Tyr Thr Cys Glu Ala Thr His Lys Thr Ser Thr
        195                 200                 205
```

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

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Glu Val Gln Leu Gln Gln Phe Gly Ala Glu Leu Val Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr
20 25 30

Asn Met Asp Trp Val Lys Gln Ser His Gly Lys Ser Leu Glu Trp Ile
35 40 45

Gly Asp Ile Asn Pro Asn Tyr Asp Ser Thr Ala Tyr Asn Gln Lys Phe
50 55 60

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

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

Ala Arg Ser Ser Pro Tyr Tyr Asp Ser Asn His Phe Asp Tyr Trp Gly
100 105 110

Gln Gly Thr Ser Leu Thr Val Ser Ser
115 120

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<212> PRT
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<220>
<223> Synthetic

<400> 50

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Glu Val Gln Leu Gln Gln Phe Gly Ala Glu Leu Val Lys Pro Gly Ala
1               5                  10                  15


Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr
            20                  25                  30


Asn Met Asp Trp Val Lys Gln Ser His Gly Lys Ser Leu Glu Trp Ile
        35                  40                  45


Gly Asp Ile Asn Pro Asn Tyr Asp Ser Thr Ala Tyr Asn Gln Lys Phe
    50                  55                  60


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


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


Ala Arg Ser Ser Pro Tyr Tyr Asp Ser Asn His Phe Asp Tyr Trp Gly
            100                 105                 110


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


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


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


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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

His His Thr Glu Lys Ser Leu Ser His Ser Pro Gly Lys
        435                 440                 445
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Gln Ile Val Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Ser Pro Gly
1               5                   10                  15

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

His Trp Phe Gln Gln Lys Pro Gly Thr Ser Pro Lys Arg Trp Ile Tyr
        35                  40                  45

Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser
    50                  55                  60

Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Asn Met Glu Ala Glu
65                  70                  75                  80
```

Asp Ala Ala Thr Tyr Tyr Cys His Gln Arg Asn Ser Tyr Pro Phe Thr
85 90 95

Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys
100 105

<210> 52
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<400> 52

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

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

His Trp Phe Gln Gln Lys Pro Gly Thr Ser Pro Lys Arg Trp Ile Tyr
35 40 45

Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser
50 55 60

Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Asn Met Glu Ala Glu
65 70 75 80

Asp Ala Ala Thr Tyr Tyr Cys His Gln Arg Asn Ser Tyr Pro Phe Thr
85 90 95

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

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

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

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

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

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

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

Asn Arg Asn Glu Cys
    210
```

<210> 53
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<212> PRT
<213> Artificial

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<223> Synthetic

<400> 53

```
Asp Val Lys Leu Val Glu Ser Gly Gly Gly Leu Val Lys Leu Gly Gly
1               5                   10                  15

Ser Leu Lys Leu Ser Cys Val Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20                  25                  30

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

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

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


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


Ala Arg Ile His Trp Pro Tyr Tyr Phe Asp Ser Trp Gly Gln Gly Thr
            100                 105                 110


Thr Leu Thr Val Ser Ser
        115


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ccggagaaga ggctggagtg ggtcgcgacc ataagtgatg gtggtgataa cacctactac      180

gcaggcactg tgacgggccg attcaccatc tccagagact ttgccaagaa caccctgtac      240

ctgcaaatga acagtctgac ctctgaggac acagccgtgt attactgtgc aagaattcat      300

tggccttact attttgactc ctggggccaa ggcaccactc tcacagtctc ctca            354


<210>  55
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<212>  PRT
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Gln Phe Val Leu Ser Gln Ser Pro Ala Ile Leu Ser Ala Ser Pro Gly
1               5                   10                  15
```

```
Glu Met Leu Thr Met Thr Cys Arg Ala Ser Ser Ser Val Ser Tyr Met
            20                  25                  30

Asn Trp Tyr Gln Gln Lys Pro Gly Ser Ser Pro Lys Pro Trp Ile Tyr
        35                  40                  45

Ala Thr Ser Asp Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser
    50                  55                  60

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

Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Trp Ser Ser His Pro Pro Thr
                85                  90                  95

Phe Gly Gly Gly Thr Lys Leu Glu Ile Arg
            100                 105
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<212> DNA
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atgacttgca gggccagctc aagtgtaagt tatatgaact ggtatcagca gaagccagga 120

tcttccccca aaccctggat ttatgccaca tccgacctgg cttctggagt ccctgctcgc 180

ttcagtggca gtgggtctgg gacctcttat tctctcacaa tcagcagagt ggaggctgaa 240

gatgctgcca cttattactg ccagcagtgg agtagtcacc cacccacgtt cggaggggggg 300

accaagctgg aaataaga 318