SEQUENCE LISTING

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<120> IMPROVED METHODS OF RNA DISPLAY

<130> BBI-315PC

<140> PCT/US2009/059057
<141> 2009-09-30

<150> US 61/101,471
<151> 2008-09-30

<160> 52

<170> PatentIn version 3.5

<210> 1
<211> 266
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 1

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

Gln Ser Leu Ser Ile Thr Cys Thr Val Ser Gly Phe Ser Leu Thr Asp
20 25 30

Tyr Gly Val Asn Trp Val Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp
35 40 45

Leu Gly Met Ile Trp Gly Asp Gly Ser Thr Asp Tyr Asp Ser Thr Leu
50 55 60

Lys Ser Arg Leu Ser Ile Ser Lys Asp Asn Ser Lys Ser Gln Ile Phe
65 70 75 80

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

Ala Arg Glu Trp His His Gly Pro Val Ala Tyr Trp Gly Gln Gly Thr
100 105 110

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

Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser His Lys Phe Met
130 135 140

Ser Thr Thr Val Gly Asp Arg Val Ser Ile Thr Cys Lys Ala Ser Gln
145 150 155 160

```
Ala Val Ser Ser Ala Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser
                165                 170                 175

Pro Lys Leu Leu Ile Tyr Trp Ala Ser Thr Arg His Thr Gly Val Pro
            180                 185                 190

Asp Arg Phe Thr Gly Ser Gly Ser Val Thr Asp Phe Thr Leu Thr Ile
        195                 200                 205

His Asn Leu Gln Ala Glu Asp Leu Ala Leu Tyr Tyr Cys Gln Gln His
    210                 215                 220

Tyr Ser Thr Pro Phe Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys
225                 230                 235                 240

Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Tyr
                245                 250                 255

Lys Asp Asp Asp Asp Lys Ala Ser Ala Ile
            260                 265
```

<210> 2
<211> 265
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 2

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

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

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

Val Ala Phe Ile Arg Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser
    50                  55                  60

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

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

Cys Lys Thr His Gly Ser His Asp Asn Trp Gly Gln Gly Thr Met Val
            100                 105                 110
```

```
Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
        115                 120                 125

Gly Gly Ser Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Gly Thr
    130                 135                 140

Pro Gly Gln Arg Val Thr Ile Ser Cys Ser Gly Gly Arg Ser Asn Ile
145                 150                 155                 160

Gly Ser Asn Thr Val Lys Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro
                165                 170                 175

Lys Leu Leu Ile Tyr Gly Asn Asp Gln Arg Pro Ser Gly Val Pro Asp
            180                 185                 190

Arg Phe Ser Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr
        195                 200                 205

Gly Val Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp
    210                 215                 220

Arg Gly Thr His Pro Ala Leu Leu Phe Gly Thr Gly Thr Lys Leu Thr
225                 230                 235                 240

Val Leu Gly Gln Pro Lys Ala Ala Pro Ser Val Thr Leu Asp Tyr Lys
                245                 250                 255

Asp Asp Asp Asp Lys Ala Ser Ala Ile
            260                 265
```

<210> 3
<211> 358
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 3

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

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

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

Val Ala Phe Ile Arg Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser
    50                  55                  60

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

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

Cys Lys Thr His Gly Ser His Asp Asn Trp Gly Gln Gly Thr Met Val
            100                 105                 110

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
        115                 120                 125

Gly Gly Ser Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Gly Thr
    130                 135                 140

Pro Gly Gln Arg Val Thr Ile Ser Cys Ser Gly Gly Arg Ser Asn Ile
145                 150                 155                 160

Gly Ser Asn Thr Val Lys Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro
                165                 170                 175

Lys Leu Leu Ile Tyr Gly Asn Asp Gln Arg Pro Ser Gly Val Pro Asp
            180                 185                 190

Arg Phe Ser Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr
        195                 200                 205

Gly Val Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp
    210                 215                 220

Arg Gly Thr His Pro Ala Leu Leu Phe Gly Thr Gly Thr Lys Leu Thr
225                 230                 235                 240

Val Leu Gly Gln Pro Lys Ala Ala Pro Ser Val Thr Leu Phe Pro Pro
                245                 250                 255

Ser Ser Glu Glu Leu Gln Ala Asn Lys Ala Thr Leu Val Cys Leu Ile
            260                 265                 270

Ser Asp Phe Tyr Pro Gly Ala Val Thr Val Ala Trp Lys Ala Asp Ser
        275                 280                 285

Ser Pro Val Lys Ala Gly Val Glu Thr Thr Thr Pro Ser Lys Gln Ser
    290                 295                 300

Asn Asn Lys Tyr Ala Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln
305                 310                 315                 320

Trp Lys Ser His Arg Ser Tyr Ser Cys Gln Val Thr His Glu Gly Ser
                325                 330                 335

Thr Val Glu Lys Thr Val Ala Pro Thr Glu Asp Tyr Lys Asp Asp Asp
            340                 345                 350
```

Asp Lys Ala Ser Ala Ile
        355

<210> 4
<211> 350
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 4

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

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

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

Val Ala Phe Ile Arg Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser
    50   55   60

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

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

Cys Lys Thr His Gly Ser His Asp Asn Trp Gly Gln Gly Thr Met Val
            100   105   110

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
        115   120   125

Gly Gly Ser Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Gly Thr
    130   135   140

Pro Gly Gln Arg Val Thr Ile Ser Cys Ser Gly Gly Arg Ser Asn Ile
145   150   155   160

Gly Ser Asn Thr Val Lys Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro
                165   170   175

Lys Leu Leu Ile Tyr Gly Asn Asp Gln Arg Pro Ser Gly Val Pro Asp
            180   185   190

Arg Phe Ser Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr
        195   200   205

```
Gly Val Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp
    210                 215                 220

Arg Gly Thr His Pro Ala Leu Leu Phe Gly Thr Gly Thr Lys Leu Thr
225                 230                 235                 240

Val Leu Gly Gln Pro Lys Ala Ala Pro Ser Val Thr Leu Pro Gln Pro
                245                 250                 255

Pro Val Asn Ala Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser
            260                 265                 270

Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu
        275                 280                 285

Gly Gly Gly Ser Gly Gly Gly Ser Gly Ser Gly Asp Phe Asp Tyr Glu
    290                 295                 300

Lys Met Ala Asn Ala Asn Lys Gly Ala Met Thr Glu Asn Ala Asp Glu
305                 310                 315                 320

Asn Ala Leu Gln Ser Asp Ala Lys Gly Lys Leu Asp Ser Val Ala Thr
                325                 330                 335

Asp Tyr Asp Tyr Lys Asp Asp Asp Asp Lys Ala Ser Ala Ile
            340                 345                 350
```

<210> 5
<211> 270
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 5

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

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

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

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

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

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

```
Cys Ala Lys Val Ser Tyr Leu Ser Thr Ala Ser Ser Leu Asp Tyr Trp
            100                 105                 110

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
        115                 120                 125

Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln Met Thr Gln Ser
    130                 135                 140

Pro Ser Ser Leu Ser Ala Ser Ile Gly Asp Arg Val Thr Ile Thr Cys
145                 150                 155                 160

Arg Ala Ser Gln Gly Ile Arg Asn Tyr Leu Ala Trp Tyr Gln Gln Lys
                165                 170                 175

Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Ala Ala Ser Thr Leu Gln
            180                 185                 190

Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe
        195                 200                 205

Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Val Ala Thr Tyr Tyr
    210                 215                 220

Cys Gln Arg Tyr Asn Arg Ala Pro Tyr Thr Phe Gly Gln Gly Thr Lys
225                 230                 235                 240

Val Glu Ile Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro
                245                 250                 255

Pro Ser Asp Tyr Lys Asp Asp Asp Asp Lys Ala Ser Ala Ile
            260                 265                 270
```

<210> 6
<211> 305
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 6

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

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

Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Asp Trp
        35                  40                  45
```

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

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

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

Cys Ala Lys Val Ser Tyr Leu Ser Thr Ala Ser Ser Leu Asp Tyr Trp
            100                 105                 110

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
        115                 120                 125

Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln Met Thr Gln Ser
    130                 135                 140

Pro Ser Ser Leu Ser Ala Ser Ile Gly Asp Arg Val Thr Ile Thr Cys
145                 150                 155                 160

Arg Ala Ser Gln Gly Ile Arg Asn Tyr Leu Ala Trp Tyr Gln Gln Lys
                165                 170                 175

Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Ala Ala Ser Thr Leu Gln
            180                 185                 190

Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe
        195                 200                 205

Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Val Ala Thr Tyr Tyr
    210                 215                 220

Cys Gln Arg Tyr Asn Arg Ala Pro Tyr Thr Phe Gly Gln Gly Thr Lys
225                 230                 235                 240

Val Glu Ile Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro
                245                 250                 255

Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu
            260                 265                 270

Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp
        275                 280                 285

Asn Ala Leu Gln Ser Asp Tyr Lys Asp Asp Asp Asp Lys Ala Ser Ala
    290                 295                 300

Ile
305
```

<210> 7
<211> 362
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 7

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

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

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

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

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

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

Cys Ala Lys Val Ser Tyr Leu Ser Thr Ala Ser Ser Leu Asp Tyr Trp
            100                 105                 110

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
        115                 120                 125

Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln Met Thr Gln Ser
    130                 135                 140

Pro Ser Ser Leu Ser Ala Ser Ile Gly Asp Arg Val Thr Ile Thr Cys
145                 150                 155                 160

Arg Ala Ser Gln Gly Ile Arg Asn Tyr Leu Ala Trp Tyr Gln Gln Lys
                165                 170                 175

Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Ala Ala Ser Thr Leu Gln
            180                 185                 190

Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe
        195                 200                 205

Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Val Ala Thr Tyr Tyr
    210                 215                 220

Cys Gln Arg Tyr Asn Arg Ala Pro Tyr Thr Phe Gly Gln Gly Thr Lys
225                 230                 235                 240
```

Val Glu Ile Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro
245 250 255

Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu
260 265 270

Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp
275 280 285

Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp
290 295 300

Ser Lys Asp Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys
305 310 315 320

Ala Asp Tyr Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln
325 330 335

Gly Leu Ser Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Asp Tyr
340 345 350

Lys Asp Asp Asp Asp Lys Ala Ser Ala Ile
355 360

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

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 8

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

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

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

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

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

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

Thr Lys Ala Ser Tyr Leu Ser Thr Ser Ser Ser Leu Asp Asn Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
115 120 125

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln Met Thr Gln Ser Pro
130 135 140

Ser Ser Leu Ser Ala Ser Ile Gly Asp Arg Val Thr Ile Thr Cys Arg
145 150 155 160

Ala Ser Gln Gly Ile Arg Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro
165 170 175

Gly Lys Ala Pro Lys Leu Leu Ile Tyr Ala Ala Ser Thr Leu Gln Ser
180 185 190

Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
195 200 205

Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Val Ala Thr Tyr Tyr Cys
210 215 220

Gln Lys Tyr Asn Ser Ala Pro Tyr Ala Phe Gly Gln Gly Thr Lys Val
225 230 235 240

Glu Ile Lys Arg

<210> 9
<211> 367
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 9

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

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

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

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

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

```
Tyr Leu Gln Met Ser Ser Leu Lys Ser Glu Asp Ser Ala Met Tyr Tyr
                85                  90                  95

Cys Ala Arg Arg Glu Arg Tyr Asp Glu Asn Gly Phe Ala Tyr Trp Gly
            100                 105                 110

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

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
    130                 135                 140

Ser Ser Leu Thr Val Thr Ala Gly Glu Lys Val Thr Met Ser Cys Thr
145                 150                 155                 160

Ser Ser Gln Ser Leu Phe Asn Ser Gly Lys Gln Lys Asn Tyr Leu Thr
                165                 170                 175

Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro Lys Val Leu Ile Tyr Trp
            180                 185                 190

Ala Ser Thr Arg Glu Ser Gly Val Pro Asp Arg Phe Thr Gly Ser Gly
        195                 200                 205

Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Val Gln Ala Glu Asp
    210                 215                 220

Leu Ala Val Tyr Tyr Cys Gln Asn Asp Tyr Ser Asn Pro Leu Thr Phe
225                 230                 235                 240

Gly Gly Gly Thr Lys Leu Glu Leu Lys Arg Thr Val Ala Ala Pro Ser
                245                 250                 255

Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala
            260                 265                 270

Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val
        275                 280                 285

Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu Ser
    290                 295                 300

Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser Ser Thr
305                 310                 315                 320

Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr Ala Cys
                325                 330                 335

Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser Phe Asn
            340                 345                 350
```

Arg Gly Glu Asp Tyr Lys Asp Asp Asp Asp Lys Ala Ser Ala Ile
355 360 365

<210> 10
<211> 863
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 10
taatacgact cactataggg acaattacta tttacaatta caccatggag gtgcagctga 60

aggagtcagg acctggcctg gtggcgccct cacagagcct gtccatcaca tgcaccgtct 120

cagggttctc attaaccgac tatggtgtaa actgggttcg ccagcctcca ggaaagggtc 180

tggagtggct gggaatgata tggggtgatg gaagcacaga ctatgattca actctcaaat 240

ccagactgag catcagcaag gacaactcca agagccaaat tttcttaaaa atgaacagtc 300

tgcaaactga tgacacagcc aggtactact gtgccagaga atggcatcat ggccccgtcg 360

cttactgggg ccaagggact ctggtcactg tctctgcagg tggaggcggt tcaggcggag 420

gtggctctgg cggtggcgga tcggacattg tgatgaccca gtctcacaaa ttcatgtcca 480

caacagtagg agacagggtc agcatcacct gcaaggccag tcaggctgtg agttctgctg 540

tagcctggta tcaacaaaaa ccaggacaat ctcctaaact actgatttac tgggcatcca 600

cccggcacac tggagtccct gatcgcttca caggcagtgg atctgtgaca gattttactc 660

tcaccatcca caatttgcag gctgaagacc tggcacttta ttactgtcag caacattata 720

gcactccatt cacgttcggc tcggggacaa agttggaaat aaaacgtacg gtggctgcac 780

catctgtctt catcttcccg ccatctgact acaaggacga cgacgacaag gcatccgcta 840

tttaaaaaaa aaaaaaaaaa aaa 863

<210> 11
<211> 858
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 11
taatacgact cactataggg acaattacta tttacaatta caatgcaggt gcagctggtg 60

cagtctgggg gaggcgtggt ccagcctggg aggtccctga gactctcctg tgcagcgtct 120

ggattcacct tcagtagcta tggcatgcac tgggtccgcc aggctccagg caaggggctg 180

gagtgggtgg catttatacg gtatgatgga agtaataaat actatgcaga ctccgtgaag 240

ggccgattca ccatctccag agacaattcc aagaacacgc tgtatctgca aatgaaaagc 300

ctgagagctg aggacacggc tgtgtattac tgtaagaccc atggtagcca tgacaactgg 360

ggccaaggga caatggtcac cgtctcttca ggtggaggcg gttcaggcgg aggtggcagc 420

ggcggtggcg gatcgtccta tgtgctgact cagcccccct cagtgtctgg gacccccggg 480

cagagagtca ccatctcttg ttctggaggc agatccaaca tcggcagtaa tactgtaaag 540

tggtatcagc agctcccagg aacggccccc aaactcctca tctatggcaa tgatcagcgg 600

ccctcagggg tccctgaccg attctctggc tccaagtctg gcacctcagc ctccctggct 660

atcactgggg tccaggctga agacgaggct gactattact gccagtcata tgacagaggc 720

acccaccccg ccctgctctt cggaactggg accaagctga ccgtcctagg tcaacccaag 780

gctgccccct cggtcactct ggactacaag gacgacgacg acaaggcatc cgctatttaa 840

aaaaaaaaaa aaaaaaaa 858

<210> 12
<211> 1137
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 12
taatacgact cactataggg acaattacta tttacaatta caatgcaggt gcagctggtg 60

cagtctgggg gaggcgtggt ccagcctggg aggtccctga gactctcctg tgcagcgtct 120

ggattcacct tcagtagcta tggcatgcac tgggtccgcc aggctccagg caaggggctg 180

gagtgggtgg catttatacg gtatgatgga agtaataaat actatgcaga ctccgtgaag 240

ggccgattca ccatctccag agacaattcc aagaacacgc tgtatctgca aatgaaaagc 300

ctgagagctg aggacacggc tgtgtattac tgtaagaccc atggtagcca tgacaactgg 360

ggccaaggga caatggtcac cgtctcttca ggtggaggcg gttcaggcgg aggtggcagc 420

ggcggtggcg gatcgtccta tgtgctgact cagcccccct cagtgtctgg gacccccggg 480

cagagagtca ccatctcttg ttctggaggc agatccaaca tcggcagtaa tactgtaaag 540

tggtatcagc agctcccagg aacggccccc aaactcctca tctatggcaa tgatcagcgg 600

ccctcagggg tccctgaccg attctctggc tccaagtctg gcacctcagc ctccctggct 660

atcactgggg tccaggctga agacgaggct gactattact gccagtcata tgacagaggc 720

acccaccccg ccctgctctt cggaactggg accaagctga ccgtcctagg tcaacccaag 780

gctgccccct cggtcactct gttcccgccc tcctctgagg agcttcaagc caacaaggcc 840

acactggtgt gtctcataag tgacttctac ccgggagccg tgacagtggc ctggaaggca 900

gatagcagcc ccgtcaaggc gggagtggag accaccacac cctccaaaca aagcaacaac 960

aagtacgcgg ccagcagcta cctgagcctg acgcctgagc agtggaagtc ccacagaagc 1020

tacagctgcc aggtcacgca tgaagggagc accgtggaga agacagtggc ccctacagaa 1080

gactacaagg acgacgacga caaggcatcc gctatttaaa aaaaaaaaaa aaaaaaa 1137

<210> 13
<211> 1113

<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 13
taatacgact cactataggg acaattacta tttacaatta caatgcaggt gcagctggtg 60

cagtctgggg gaggcgtggt ccagcctggg aggtccctga gactctcctg tgcagcgtct 120

ggattcacct tcagtagcta tggcatgcac tgggtccgcc aggctccagg caaggggctg 180

gagtgggtgg catttatacg gtatgatgga agtaataaat actatgcaga ctccgtgaag 240

ggccgattca ccatctccag agacaattcc aagaacacgc tgtatctgca aatgaaaagc 300

ctgagagctg aggacacggc tgtgtattac tgtaagaccc atggtagcca tgacaactgg 360

ggccaaggga caatggtcac cgtctcttca ggtggaggcg gttcaggcgg aggtggcagc 420

ggcggtggcg gatcgtccta tgtgctgact cagcccccct cagtgtctgg gacccccggg 480

cagagagtca ccatctcttg ttctggaggc agatccaaca tcggcagtaa tactgtaaag 540

tggtatcagc agctcccagg aacggccccc aaactcctca tctatggcaa tgatcagcgg 600

ccctcagggg tccctgaccg attctctggc tccaagtctg gcacctcagc ctccctggct 660

atcactgggg tccaggctga agacgaggct gactattact gccagtcata tgacagaggc 720

acccaccccg ccctgctctt cggaactggg accaagctga ccgtcctagg tcaacccaag 780

gctgccccct cggtcactct gcctcaacct cctgtcaatg ctggcggcgg ctctggtggt 840

ggttctggtg gcggctctga gggtggtggc tctgagggtg gcggttctga gggtggcggc 900

tctgagggag gcggttccgg tggtggctct ggttccggtg attttgatta tgaaaagatg 960

gcaaacgcta ataaggggggc tatgaccgaa aatgccgatg aaaacgcgct acagtctgac 1020

gctaaaggca aacttgattc tgtcgctact gattacgatt acaaagacga tgacgataag 1080

gcatccgcta tttaaaaaaa aaaaaaaaaa aaa 1113

<210> 14
<211> 1097
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 14
taatacgact cactataggg acaattacta tttacaatta caatgcaggt gcagctggtg 60

cagtctgggg gaggcgtggt ccagcctggg aggtccctga gactctcctg tgcagcgtct 120

ggattcacct tcagtagcta tggcatgcac tgggtccgcc aggctccagg caaggggctg 180

gagtgggtgg catttatacg gtatgatgga agtaataaat actatgcaga ctccgtgaag 240

ggccgattca ccatctccag agacaattcc aagaacacgc tgtatctgca aatgaaaagc 300

ctgagagctg aggacacggc tgtgtattac tgtaagaccc atggtagcca tgacaactgg 360

ggccaaggga caatggtcac cgtctcttca ggtggaggcg gttcaggcgg aggtggcagc 420

ggcggtggcg gatcgtccta tgtgctgact cagcccccct cagtgtctgg gacccccggg 480

cagagagtca ccatctcttg ttctggaggc agatccaaca tcggcagtaa tactgtaaag 540

tggtatcagc agctcccagg aacggccccc aaactcctca tctatggcaa tgatcagcgg 600

ccctcagggg tccctgaccg attctctggc tccaagtctg gcacctcagc ctccctggct 660

atcactgggg tccaggctga agacgaggct gactattact gccagtcata tgacagaggc 720

acccaccccg ccctgctctt cggaactggg accaagctga ccgtcctagg tcaacccaag 780

gctgccccct cggtcactct gcctcaacct cctgtcaatg ctggcggcgg ctctggtggt 840

ggttctggtg gcggctctga gggtggtggc tctgagggtg gcggttctga gggtggcggc 900

tctgagggag gcggttccgg tggtggctct ggttccggtg attttgatta tgaaaagatg 960

gcaaacgcta ataaggggggc tatgaccgaa aatgccgatg aaaacgcgct acagtctgac 1020

gctaaaggca aacttgattc tgtcgctact gattacgatt acaaagacga tgacgataag 1080

gcatccgcta tttaaaa 1097

<210> 15
<211> 876
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 15
ttaatacgac tcactatagg gacaattact atttacaatt acaccatgga ggtgcagctg 60

gtggagtctg ggggaggctt ggtacagccc ggcaggtccc tgagactctc ctgtgcggcc 120

tctggattca cctttgatga ttatgccatg cactgggtcc ggcaagctcc agggaagggc 180

ctggactggg tctcagctat cacttggaat agtggtcaca tagactatgc ggactctgtg 240

gagggccgat tcgccgtctc cagagacaac gccaagaacg ccctgtatct gcaaatgaac 300

agtctgagac ctgaggacac ggcagtatat tactgtgcga aagtctcgta ccttagcacc 360

gcgtcctccc ttgactactg gggccaaggt accctggtca ccgtctcgag tggtggaggc 420

ggttcaggcg gaggtggctc tggcggtggc ggatcggaca tccagatgac ccagtctcca 480

tcctccctgt ctgcatctat aggggacaga gtcaccatca cttgtcgggc aagtcagggc 540

atcagaaatt acttagcctg gtatcagcaa aaaccaggga aagcccctaa gctcctgatc 600

tatgctgcat ccactttgca atcaggggtc ccatctcggt tcagtggcag tggatctggg 660

acagatttca ctctcaccat cagcagccta cagcctgaag atgttgcaac ttattactgt 720

caaaggtata accgtgcccc gtacactttt ggccagggga ccaaggtgga aatcaaacgt 780

acggtggctg caccatctgt cttcatcttc ccgccatctg actacaagga cgacgacgac 840

aaggcatccg ctatttaaaa aaaaaaaaaa aaaaaa 876

<210> 16
<211> 980

<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 16
taatacgact cactataggg acaattacta tttacaatta caccatggag gtgcagctgg 60

tggagtctgg gggaggcttg gtacagcccg gcaggtccct gagactctcc tgtgcggcct 120

ctggattcac ctttgatgat tatgccatgc actgggtccg gcaagctcca gggaagggcc 180

tggactgggt ctcagctatc acttggaata gtggtcacat agactatgcg gactctgtgg 240

agggccgatt cgccgtctcc agagacaacg ccaagaacgc cctgtatctg caaatgaaca 300

gtctgagacc tgaggacacg gcagtatatt actgtgcgaa agtctcgtac cttagcaccg 360

cgtcctccct tgactactgg ggccaaggta ccctggtcac cgtctcgagt ggtggaggcg 420

gttcaggcgg aggtggctct ggcggtggcg gatcggacat ccagatgacc cagtctccat 480

cctccctgtc tgcatctata ggggacagag tcaccatcac ttgtcgggca agtcagggca 540

tcagaaatta cttagcctgg tatcagcaaa aaccagggaa agcccctaag ctcctgatct 600

atgctgcatc cactttgcaa tcaggggtcc catctcggtt cagtggcagt ggatctggga 660

cagatttcac tctcaccatc agcagcctac agcctgaaga tgttgcaact tattactgtc 720

aaaggtataa ccgtgccccg tacacttttg gccaggggac caaggtggaa atcaaacgta 780

cggtggctgc accatctgtc ttcatcttcc cgccatctga tgagcagttg aaatctggaa 840

ctgcctctgt tgtgtgcctg ctgaataact tctatcccag agaggccaaa gtacagtgga 900

aggtggataa cgccctccaa tcggactaca aggacgacga cgacaaggca tccgctattt 960

aaaaaaaaaa aaaaaaaaaa 980

<210> 17
<211> 1151
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 17
taatacgact cactataggg acaattacta tttacaatta caccatggag gtgcagctgg 60

tggagtctgg gggaggcttg gtacagcccg gcaggtccct gagactctcc tgtgcggcct 120

ctggattcac ctttgatgat tatgccatgc actgggtccg gcaagctcca gggaagggcc 180

tggactgggt ctcagctatc acttggaata gtggtcacat agactatgcg gactctgtgg 240

agggccgatt cgccgtctcc agagacaacg ccaagaacgc cctgtatctg caaatgaaca 300

gtctgagacc tgaggacacg gcagtatatt actgtgcgaa agtctcgtac cttagcaccg 360

cgtcctccct tgactactgg ggccaaggta ccctggtcac cgtctcgagt ggtggaggcg 420

gttcaggcgg aggtggctct ggcggtggcg gatcggacat ccagatgacc cagtctccat 480

cctccctgtc tgcatctata ggggacagag tcaccatcac ttgtcgggca agtcagggca 540

tcagaaatta cttagcctgg tatcagcaaa aaccagggaa agcccctaag ctcctgatct 600

atgctgcatc cactttgcaa tcaggggtcc catctcggtt cagtggcagt ggatctggga 660

cagatttcac tctcaccatc agcagcctac agcctgaaga tgttgcaact tattactgtc 720

aaaggtataa ccgtgccccg tacacttttg gccaggggac caaggtggaa atcaaacgta 780

cggtggctgc accatctgtc ttcatcttcc cgccatctga tgagcagttg aaatctggaa 840

ctgcctctgt tgtgtgcctg ctgaataact tctatcccag agaggccaaa gtacagtgga 900

aggtggataa cgccctccaa tcgggtaact cccaggagag tgtcacagag caggacagca 960

aggacagcac ctacagcctc agcagcaccc tgacgctgag caaagcagac tacgagaaac 1020

acaaagtcta cgcctgcgaa gtcacccatc agggcctgag ctcgcccgtc acaaagagct 1080

tcaacagggg agaggactac aaggacgacg acgacaaggc atccgctatt taaaaaaaaa 1140

aaaaaaaaaa a 1151

<210> 18
<211> 878
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 18
taatacgact cactataggg acaattacta tttacaatta caccatggaa gtgcagctgg 60

tggaaagcgg cggcgatctg gtgaaaccgg gcggcagcct gaaactgagc tgcgcggcga 120

gcggctttag ctttagcagc tatggcatga gctgggtgcg ccagaccccg gataaacgcc 180

tggaatgggt ggcgaccatt agcaacggcg gcggctatac ctattatccg gatagcgtga 240

aaggccgctt taccattagc cgcgataacg cgaaaaacac cctgtatctg cagatgagca 300

gcctgaaaag cgaagatagc gcgatgtatt attgcgcgcg ccgcgaacgc tatgatgaaa 360

acggctttgc gtattggggc cagggcaccc tggtgaccgt gagcgcgggt ggaggcggtt 420

caggcggagg tggcagcggc ggtggcggat cggatattgt gatgacccag agcccgagca 480

gcctgaccgt gaccgcgggc gaaaaagtga ccatgagctg caccagcagc cagagcctgt 540

ttaacagcgg caaacagaaa aactatctaa cctggtatca gcagaaaccg ggccagccgc 600

cgaaagtgct gatttattgg gcgagcaccc gcgaaagcgg cgtgccggat cgctttaccg 660

gcagcggcag cggcaccgat tttaccctga ccattagcag cgtgcaggcg gaagatctgg 720

cggtgtatta ttgccagaac gattatagca acccgctgac ctttggcggc ggcaccaaac 780

tggaactgaa acgtacggtg gctgcaccat ctgtcttcat cgactacaag gacgacgacg 840

acaaggcatc cgctatttaa aaaaaaaaaa aaaaaaaa 878

<210> 19
<211> 1166
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 19
taatacgact cactataggg acaattacta tttacaatta caccatggaa gtgcagctgg 60

tggaaagcgg cggcgatctg gtgaaaccgg gcggcagcct gaaactgagc tgcgcggcga 120

gcggctttag ctttagcagc tatggcatga gctgggtgcg ccagaccccg gataaacgcc 180

tggaatgggt ggcgaccatt agcaacggcg gcggctatac ctattatccg gatagcgtga 240

aaggccgctt taccattagc cgcgataacg cgaaaaacac cctgtatctg cagatgagca 300

gcctgaaaag cgaagatagc gcgatgtatt attgcgcgcg ccgcgaacgc tatgatgaaa 360

acggctttgc gtattggggc cagggcaccc tggtgaccgt gagcgcgggt ggaggcggtt 420

caggcggagg tggcagcggc ggtggcggat cggatattgt gatgacccag agcccgagca 480

gcctgaccgt gaccgcgggc gaaaaagtga ccatgagctg caccagcagc cagagcctgt 540

ttaacagcgg caaacagaaa aactatctaa cctggtatca gcagaaaccg ggccagccgc 600

cgaaagtgct gatttattgg gcgagcaccc gcgaaagcgg cgtgccggat cgctttaccg 660

gcagcggcag cggcaccgat tttaccctga ccattagcag cgtgcaggcg gaagatctgg 720

cggtgtatta ttgccagaac gattatagca acccgctgac ctttggcggc ggcaccaaac 780

tggaactgaa acgtacggtg gctgcaccat ctgtcttcat cttcccgcca tctgatgagc 840

agttgaaatc tggaactgcc tctgttgtgt gcctgctgaa taacttctat cccagagagg 900

ccaaagtaca gtggaaggtg gataacgccc tccaatcggg taactcccag gagagtgtca 960

cagagcagga cagcaaggac agcacctaca gcctcagcag caccctgacg ctgagcaaag 1020

cagactacga gaaacacaaa gtctacgcct gcgaagtcac ccatcagggc ctgagctcgc 1080

ccgtcacaaa gagcttcaac aggggagagg actacaagga cgacgacgac aaggcatccg 1140

ctatttaaaa aaaaaaaaaa aaaaaa 1166

<210> 20
<211> 10
<212> RNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 20
uagcggaugc 10

<210> 21
<211> 28
<212> RNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 21
uagcggaugc aaaaaaaaaa aaaaaaaa 28

<210> 22
<211> 70
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 22
taatacgact cactataggg acaattacta tttacaatta caccatggag gtgcagctga 60

aggagtcagg 70

<210> 23
<211> 68
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 23
cgatccgcca ccgccagagc cacctccgcc tgaaccgcct ccacctgcag agacagtgac 60

cagagtcc 68

<210> 24
<211> 67
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 24
ggtggaggcg gttcaggcgg aggtggctct ggcggtggcg gatcggacat tgtgatgacc 60

cagtctc 67

<210> 25
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 25
gatggtgcag ccaccgtacg ttttatttcc aactttgtcc ccgag 45

<210> 26
<211> 70
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 26
ggacaattac tatttacaat tacaccatgg aagtgcagct ggtggaaagc ggcggcgatc 60

tggtgaaacc 70

<210> 27
<211> 70
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 27
gctgctaaag ctaaagccgc tcgccgcgca gctcagtttc aggctgccgc ccggtttcac 60

cagatcgccg 70

<210> 28
<211> 70
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 28
ggctttagct ttagcagcta tggcatgagc tgggtgcgcc agaccccgga taaacgcctg 60

gaatgggtgg 70

<210> 29
<211> 70
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 29
gcctttcacg ctatccggat aataggtata gccgccgccg ttgctaatgg tcgccaccca 60

ttccaggcgt 70

<210> 30
<211> 69
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 30
ccggatagcg tgaaaggccg ctttaccatt agccgcgata acgcgaaaaa caccctgtat 60

ctgcagatg 69

<210> 31
<211> 70
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 31
gttcgcggcg cgcgcaataa tacatcgcgc tatcttcgct tttcaggctg ctcatctgca 60

gatacagggt 70

<210> 32
<211> 70
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 32
attgcgcgcg ccgcgaacgc tatgatgaaa acggctttgc gtattggggc cagggcaccc 60

tggtgaccgt 70

<210> 33
<211> 70
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 33
cgatccgcca ccgccgctgc cacctccgcc tgaaccgcct ccacccgcgc tcacggtcac 60

cagggtgccc 70

<210> 34
<211> 70
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 34
agcggcggtg gcggatcgga tattgtgatg acccagagcc cgagcagcct gaccgtgacc 60

gcgggcgaaa 70

<210> 35
<211> 70
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 35
tgtttgccgc tgttaaacag gctctggctg ctggtgcagc tcatggtcac tttttcgccc 60

gcggtcacgg 70

<210> 36
<211> 70
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 36
gtttaacagc ggcaaacaga aaaactatct gacctggtat cagcagaaac cgggccagcc 60

gccgaaagtg 70

<210> 37
<211> 70
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 37
cggtaaagcg atccggcacg ccgctttcgc gggtgctcgc ccaataaatc agcactttcg 60

gcggctggcc 70

<210> 38
<211> 70
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 38
tgccggatcg ctttaccggc agcggcagcg gcaccgattt taccctgacc attagcagcg 60

tgcaggcgga 70

<210> 39
<211> 70
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 39
aaaggtcagc gggttgctat aatcgttctg gcaataatac accgccagat cttccgcctg 60

cacgctgcta 70

<210> 40
<211> 70
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 40
agcaacccgc tgacctttgg cggcggcacc aaactggaac tgaaacgtac ggtggctgca 60

ccatctgtct 70

<210> 41
<211> 64
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic primer

<400> 41
ttaaatagcg gatgccttgt cgtcgtcgtc cttgtagtcg atgaagacag atggtgcagc 60

cacc 64

<210> 42
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 42

Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser
1 5 10

<210> 43
<211> 49
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 43

Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu
1 5 10 15

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

Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln
35 40 45

Ser

<210> 44
<211> 106
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 44

Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu
1 5 10 15

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

Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln
35 40 45

Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser
50 55 60

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

Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser
85 90 95

Pro Val Thr Lys Ser Phe Asn Arg Gly Glu
100 105

<210> 45
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide

<400> 45
gtcgtcgtcg tccttgtagt cgaagacaga tggtgcagcc acagttcg 48

<210> 46
<211> 79
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide

<400> 46
ttttttttttt ttttttttttt aaatagcgga tgccttgtcg tcgtcgtcct tgtagtcgaa 60

gacagatggt gcagccaca 79

<210> 47
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide

<400> 47
gtcgtcgtcg tccttgtagt cagtgacagt ggggttggcc ttgggctgac ckaggacggt 60

<210> 48
<211> 79
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide

<400> 48
ttttttttttt ttttttttttt aaatagcgga tgccttgtcg tcgtcgtcct tgtagtcagt 60

gacagtgggg ttggccttg 79

<210> 49
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide

<400> 49
cgctacctcc gccgccagac 20

<210> 50
<211> 76
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide

<400> 50
ttttttttt ttttttttt aaatagcgga tgctttgtca tcatcatctt tataatcgct 60

acctccgccg ccagac 76

<210> 51
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide

<400> 51
gacacggccg tgtattactg t 21

<210> 52
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide

<400> 52
gctgaggaga cggtgacc 18