SEQUENCE LISTING

<110> Sutherland, May Kung
Ryan, Maureen
Sussman, Django
Burke, Patrick
Jeffrey, Scott

<120> CD33 Antibodies and Use of Same to Treat Cancer

<130> 057762/431172

<140> 13/804,227
<141> 2013-03-14

<150> 61/649,110
<151> 2012-05-18

<160> 57

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 107
<212> PRT
<213> Mus musculus

<400> 1

Asp	Ile	Lys	Met	Thr	Gln	Ser	Pro	Ser	Ser	Met	Tyr	Ala	Ser	Leu	Gly
1				5				10						15	
Glu	Arg	Val	Ile	Ile	Asn	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
Glu	Asp	Met	Gly	Ile	Tyr	Tyr	Cys	Leu	Gln	Tyr	Asp	Glu	Phe	Pro	Leu
				85					90					95	
Thr	Phe	Gly	Ala	Gly	Thr	Lys	Leu	Glu	Leu	Lys					
			100					105							

<210> 2
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthesized

<400> 2

Asp	Ile	Gln	Met	Thr	Gln	Ser	Pro	Ser	Ser	Leu	Ser	Ala	Ser	Val	Gly
1				5				10						15	
Asp	Arg	Val	Thr	Ile	Thr	Cys	Lys	Ala	Ser	Gln	Asp	Ile	Asn	Ser	Tyr
			20					25					30		
Leu	Ser	Trp	Phe	Gln	Gln	Lys	Pro	Gly	Lys	Ala	Pro	Lys	Ser	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	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Ser	Leu	Gln	Pro
65					70					75					80
Glu	Asp	Phe	Ala	Thr	Tyr	Tyr	Cys	Leu	Gln	Tyr	Asp	Glu	Phe	Pro	Leu
				85					90					95	

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
100 105

<210> 3
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthesized

<400> 3
Asp Ile Lys Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15
Asp 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 Ala Pro Lys Ser 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 Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80
Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln Tyr Asp Glu Phe Pro Leu
85 90 95
Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
100 105

<210> 4
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthesized

<400> 4
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15
Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Asp Ile Asn Ser Tyr
20 25 30
Leu Ser Trp Phe Gln Gln Lys Pro Gly Lys Ala 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 Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80
Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln Tyr Asp Glu Phe Pro Leu
85 90 95
Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
100 105

<210> 5
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthesized

<400> 5
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15
Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Asp Ile Asn Ser Tyr
20 25 30
Leu Ser Trp Phe Gln Gln Lys Pro Gly Lys Ala Pro Lys Ser 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 Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80
Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln Tyr Asp Glu Phe Pro Leu
                85                  90                  95
Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100                 105
```

<210> 6
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthesized

<400> 6

```
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1               5                  10                  15
Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Asp Ile Asn Ser Tyr
            20                  25                  30
Leu Ser Trp Phe Gln Gln Lys Pro Gly Lys Ala Pro Lys Ser 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 Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80
Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln Tyr Asp Glu Phe Pro Leu
                85                  90                  95
Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100                 105
```

<210> 7
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthesized

<400> 7

```
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1               5                  10                  15
Asp Arg Val Ile Ile Asn Cys Lys Ala Ser Gln Asp Ile Asn Ser Tyr
            20                  25                  30
Leu Ser Trp Phe Gln Gln Lys Pro Gly Lys Ala Pro Lys Ser 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 Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80
Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln Tyr Asp Glu Phe Pro Leu
                85                  90                  95
Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100                 105
```

<210> 8
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthesized

<400> 8
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1   5   10   15
Asp Arg Val Thr Ile Asn Cys Lys Ala Ser Gln Asp Ile Asn Ser Tyr
            20   25   30
Leu Ser Trp Phe Gln Gln Lys Pro Gly Lys Ala 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 Thr Leu Thr Ile Ser Ser Leu Gln Pro
65   70   75   80
Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln Tyr Asp Glu Phe Pro Leu
                85   90   95
Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100   105

<210> 9
<211> 117
<212> PRT
<213> Mus musculus

<400> 9
Gln Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Arg Pro Gly Thr
 1   5   10   15
Phe Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
            20   25   30
Asp Ile Asn Trp Val Asn Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
        35   40   45
Gly Trp Ile Tyr Pro Gly Asp Gly Ser Thr Lys Tyr Asn Glu Lys Phe
    50   55   60
Lys Ala Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr
65   70   75   80
Leu Gln Leu Asn Asn Leu Thr Ser Glu Asn Ser Ala Val Tyr Phe Cys
                85   90   95
Ala Ser Gly Tyr Glu Asp Ala Met Asp Tyr Trp Gly Gln Gly Thr Ser
            100   105   110
Val Thr Val Ser Ser
        115

<210> 10
<211> 117
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthesized

<400> 10
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1   5   10   15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
            20   25   30
Asp Ile Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35   40   45
Gly Trp Ile Tyr Pro Gly Asp Gly Ser Thr Lys Tyr Asn Glu Lys Phe
    50   55   60
Lys Ala Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65   70   75   80
Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Gly Tyr Glu Asp Ala Met Asp Tyr Trp Gly Gln Gly Thr Thr
            100   105   110
Val Thr Val Ser Ser
        115

<210> 11
<211> 117
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthesized

<400> 11
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30
Asp Ile Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45
Gly Trp Ile Tyr Pro Gly Asp Gly Ser Thr Lys Tyr Asn Glu Lys Phe
50 55 60
Lys Ala Arg Val Thr Met Thr Ala Asp Thr Ser Thr Ser Thr Ala Tyr
65 70 75 80
Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Ala Arg Gly Tyr Glu Asp Ala Met Asp Tyr Trp Gly Gln Gly Thr Thr
100 105 110
Val Thr Val Ser Ser
115

<210> 12
<211> 117
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthesized

<400> 12
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30
Asp Ile Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45
Gly Trp Ile Tyr Pro Gly Asp Gly Ser Thr Lys Tyr Asn Glu Lys Phe
50 55 60
Lys Ala Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65 70 75 80
Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Ala Ser Gly Tyr Glu Asp Ala Met Asp Tyr Trp Gly Gln Gly Thr Thr
100 105 110
Val Thr Val Ser Ser
115

<210> 13
<211> 117
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthesized

<400> 13
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30

```
Asp Ile Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35                  40                  45
Gly Trp Ile Tyr Pro Gly Asp Gly Ser Thr Lys Tyr Asn Glu Lys Phe
    50                  55                  60
Lys Ala Arg Val Thr Met Thr Thr Asp Lys Ser Thr Ser Thr Ala Tyr
65                  70                  75                  80
Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Gly Tyr Glu Asp Ala Met Asp Tyr Trp Gly Gln Gly Thr Thr
            100                 105                 110
Val Thr Val Ser Ser
        115
```

<210> 14
<211> 117
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthesized

<400> 14

```
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1               5                  10                  15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
            20                  25                  30
Asp Ile Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile
        35                  40                  45
Gly Trp Ile Tyr Pro Gly Asp Gly Ser Thr Lys Tyr Asn Glu Lys Phe
    50                  55                  60
Lys Ala Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65                  70                  75                  80
Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Gly Tyr Glu Asp Ala Met Asp Tyr Trp Gly Gln Gly Thr Thr
            100                 105                 110
Val Thr Val Ser Ser
        115
```

<210> 15
<211> 117
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthesized

<400> 15

```
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1               5                  10                  15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
            20                  25                  30
Asp Ile Asn Trp Val Asn Gln Arg Pro Gly Gln Gly Leu Glu Trp Met
        35                  40                  45
Gly Trp Ile Tyr Pro Gly Asp Gly Ser Thr Lys Tyr Asn Glu Lys Phe
    50                  55                  60
Lys Ala Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65                  70                  75                  80
Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Gly Tyr Glu Asp Ala Met Asp Tyr Trp Gly Gln Gly Thr Thr
            100                 105                 110
Val Thr Val Ser Ser
        115
```

<210> 16
<211> 117
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthesized

<400> 16
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1   5   10   15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
            20   25   30
Asp Ile Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35   40   45
Gly Trp Ile Tyr Pro Gly Asp Gly Ser Thr Lys Tyr Asn Glu Lys Phe
    50   55   60
Lys Ala Lys Ala Thr Leu Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65   70   75   80
Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Gly Tyr Glu Asp Ala Met Asp Tyr Trp Gly Gln Gly Thr Thr
            100   105   110
Val Thr Val Ser Ser
        115

<210> 17
<211> 117
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthesized

<400> 17
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1   5   10   15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
            20   25   30
Asp Ile Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35   40   45
Gly Trp Ile Tyr Pro Gly Asp Gly Ser Thr Lys Tyr Asn Glu Lys Phe
    50   55   60
Lys Ala Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65   70   75   80
Met Glu Leu Ser Ser Leu Thr Ser Asp Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Gly Tyr Glu Asp Ala Met Asp Tyr Trp Gly Gln Gly Thr Thr
            100   105   110
Val Thr Val Ser Ser
        115

<210> 18
<211> 117
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthesized

<400> 18
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1   5   10   15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
            20   25   30
Asp Ile Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile

35 40 45
Gly Trp Ile Tyr Pro Gly Asp Gly Ser Thr Lys Tyr Asn Glu Lys Phe
50 55 60
Lys Ala Lys Ala Thr Leu Thr Ala Asp Thr Ser Thr Ser Thr Ala Tyr
65 70 75 80
Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Ala Ser Gly Tyr Glu Asp Ala Met Asp Tyr Trp Gly Gln Gly Thr Thr
100 105 110
Val Thr Val Ser Ser
115

<210> 19
<211> 5
<212> PRT
<213> Mus musculus

<400> 19
Asn Tyr Asp Ile Asn
1 5

<210> 20
<211> 17
<212> PRT
<213> Mus musculus

<400> 20
Trp Ile Tyr Pro Gly Asp Gly Ser Thr Lys Tyr Asn Glu Lys Phe Lys
1 5 10 15
Ala

<210> 21
<211> 8
<212> PRT
<213> Mus musculus

<400> 21
Gly Tyr Glu Asp Ala Met Asp Tyr
1 5

<210> 22
<211> 11
<212> PRT
<213> Mus musculus

<400> 22
Lys Ala Ser Gln Asp Ile Asn Ser Tyr Leu Ser
1 5 10

<210> 23
<211> 7
<212> PRT
<213> Mus musculus

<400> 23
Arg Ala Asn Arg Leu Val Asp
1 5

<210> 24
<211> 9
<212> PRT

<213> Mus musculus

<400> 24
Leu Gln Tyr Asp Glu Phe Pro Leu Thr
 1   5

<210> 25
<211> 106
<212> PRT
<213> Homo sapiens

<400> 25
Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln
 1   5   10   15
Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr
            20   25   30
Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser
        35   40   45
Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr
    50   55   60
Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys
65   70   75   80
His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro
                85   90   95
Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
            100   105

<210> 26
<211> 330
<212> PRT
<213> Homo sapiens

<400> 26
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys
 1   5   10   15
Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
            20   25   30
Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
        35   40   45
Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
    50   55   60
Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr
65   70   75   80
Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys
                85   90   95
Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys
            100   105   110
Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro
        115   120   125
Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys
    130   135   140
Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp
145   150   155   160
Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu
                165   170   175
Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu
            180   185   190
His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn
        195   200   205
Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly
    210   215   220
Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu
225   230   235   240
Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr
                245   250   255
Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn

```
            260                 265                 270
Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
        275                 280                 285
Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn
    290                 295                 300
Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr
305                 310                 315                 320
Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
                325                 330
```

<210> 27
<211> 329
<212> PRT
<213> Homo sapiens

<400> 27

```
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys
 1               5                  10                  15
Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
            20                  25                  30
Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
        35                  40                  45
Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
    50                  55                  60
Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr
65                  70                  75                  80
Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys
                85                  90                  95
Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys
            100                 105                 110
Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro
        115                 120                 125
Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys
    130                 135                 140
Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp
145                 150                 155                 160
Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu
                165                 170                 175
Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu
            180                 185                 190
His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn
        195                 200                 205
Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly
    210                 215                 220
Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu
225                 230                 235                 240
Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr
                245                 250                 255
Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn
            260                 265                 270
Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
        275                 280                 285
Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn
    290                 295                 300
Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr
305                 310                 315                 320
Gln Lys Ser Leu Ser Leu Ser Pro Gly
                325
```

<210> 28
<211> 330
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthesized

<400> 28
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys
 1   5   10   15
Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
            20   25   30
Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
        35   40   45
Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
    50   55   60
Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr
65   70   75   80
Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys
                85   90   95
Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys
            100   105   110
Pro Ala Pro Glu Leu Leu Gly Gly Pro Cys Val Phe Leu Phe Pro Pro
        115   120   125
Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys
    130   135   140
Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp
145   150   155   160
Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu
                165   170   175
Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu
            180   185   190
His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn
        195   200   205
Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly
    210   215   220
Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu
225   230   235   240
Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr
                245   250   255
Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn
            260   265   270
Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
        275   280   285
Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn
    290   295   300
Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr
305   310   315   320
Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
                325   330

<210> 29
<211> 329
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthesized

<400> 29
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys
 1   5   10   15
Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
            20   25   30
Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
        35   40   45
Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
    50   55   60
Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr
65   70   75   80
Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys
                85   90   95
Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys

```
            100                 105                 110
Pro Ala Pro Glu Leu Leu Gly Gly Pro Cys Val Phe Leu Phe Pro Pro
        115                 120                 125
Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys
    130                 135                 140
Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp
145                 150                 155                 160
Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu
                165                 170                 175
Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu
            180                 185                 190
His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn
        195                 200                 205
Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly
    210                 215                 220
Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu
225                 230                 235                 240
Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr
                245                 250                 255
Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn
            260                 265                 270
Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
        275                 280                 285
Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn
    290                 295                 300
Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr
305                 310                 315                 320
Gln Lys Ser Leu Ser Leu Ser Pro Gly
                325
```

<210> 30
<211> 22
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthesized

<400> 30

```
Met Asp Met Arg Thr Pro Ala Gln Phe Leu Gly Ile Leu Leu Leu Trp
 1               5                  10                  15
Phe Pro Gly Ile Lys Cys
            20
```

<210> 31
<211> 19
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthesized

<400> 31

```
Met Gly Trp Arg Trp Ile Phe Leu Phe Leu Leu Ser Gly Thr Ala Gly
 1               5                  10                  15
Val His Cys
```

<210> 32
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthesized

<400> 32
gacatccaga tgacccagtc tccatcctca ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgta aggctagtca ggacattaat agctatttga gctggtttca gcagaaacca 120
gggaaagccc ctaagtccct gatctataga gcaaatagat tggtagatgg ggtcccatca 180
aggttctctg gcagtggatc tgggacagat ttcactctca ccatcagcag cctgcagcct 240
gaagattttg caacttatta ctgcttgcag tatgatgagt ttcctctcac atttggagga 300
gggaccaagg tggagatcaa a 321

<210> 33
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthesized

<400> 33
gacatcaaga tgacccagtc tccatcctca ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgta aggctagtca ggacattaat agctatttga gctggtttca gcagaaacca 120
gggaaagccc ctaagtccct gatctataga gcaaatagat tggtagatgg ggtcccatca 180
aggttctctg gcagtggatc tgggacagat ttcactctca ccatcagcag cctgcagcct 240
gaagattttg caacttatta ctgcttgcag tatgatgagt ttcctctcac atttggagga 300
gggaccaagg tggagatcaa a 321

<210> 34
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthesized

<400> 34
gacatccaga tgacccagtc tccatcctca ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgta aggctagtca ggacattaat agctatttga gctggtttca gcagaaacca 120
gggaaagccc ctaagaccct gatctataga gcaaatagat tggtagatgg ggtcccatca 180
aggttctctg gcagtggatc tgggacagat ttcactctca ccatcagcag cctgcagcct 240
gaagattttg caacttatta ctgcttgcag tatgatgagt ttcctctcac atttggagga 300
gggaccaagg tggagatcaa a 321

<210> 35
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthesized

<400> 35
gacatccaga tgacccagtc tccatcctca ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgta aggctagtca ggacattaat agctatttga gctggtttca gcagaaacca 120
gggaaagccc ctaagtccct gatctataga gcaaatagat tggtagatgg ggtcccatca 180
aggttctctg gcagtggatc tgggcaagat ttcactctca ccatcagcag cctgcagcct 240
gaagattttg caacttatta ctgcttgcag tatgatgagt ttcctctcac atttggagga 300
gggaccaagg tggagatcaa a 321

<210> 36
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthesized

<400> 36
gacatccaga tgacccagtc tccatcctca ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgta aggctagtca ggacattaat agctatttga gctggtttca gcagaaacca 120

gggaaagccc ctaagtccct gatctataga gcaaatagat tggtagatgg ggtcccatca 180
aggttctctg gcagtggatc tgggacagat tatactctca ccatcagcag cctgcagcct 240
gaagattttg caacttatta ctgcttgcag tatgatgagt ttcctctcac atttggagga 300
gggaccaagg tggagatcaa a 321

<210> 37
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthesized

<400> 37
gacatccaga tgacccagtc tccatcctca ctgtctgcat ctgtaggaga cagagtcatt 60
atcaattgta aggctagtca ggacattaat agctatttga gctggtttca gcagaaacca 120
gggaaagccc ctaagtccct gatctataga gcaaatagat tggtagatgg ggtcccatca 180
aggttctctg gcagtggatc tgggacagat ttcactctca ccatcagcag cctgcagcct 240
gaagattttg caacttatta ctgcttgcag tatgatgagt ttcctctcac atttggagga 300
gggaccaagg tggagatcaa a 321

<210> 38
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthesized

<400> 38
gacatccaga tgacccagtc tccatcctca ctgtctgcat ctgtaggaga cagagtcacc 60
atcaattgta aggctagtca ggacattaat agctatttga gctggtttca gcagaaacca 120
gggaaagccc ctaagaccct gatctataga gcaaatagat tggtagatgg ggtcccatca 180
aggttctctg gcagtggatc tgggcaagat tatactctca ccatcagcag cctgcagcct 240
gaagattttg caacttatta ctgcttgcag tatgatgagt ttcctctcac atttggagga 300
gggaccaagg tggagatcaa a 321

<210> 39
<211> 351
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthesized

<400> 39
caggttcagc tggtgcagtc tggagctgag gtgaagaagc ctggggcctc agtgaaggtc 60
tcctgcaagg cttctggtta cacctttacc aattatgata taaattgggt gagacaggcc 120
cctggacaag ggcttgagtg gatgggatgg atttatcctg gagatggtag taccaaatat 180
aatgagaaat tcaaggccag agtcaccatg accacagaca catccaccag cacagcctac 240
atggagctga ggagcctgag atctgatgac acagctgtgt attactgtgc tagaggatat 300
gaagatgcta tggactactg ggggcaaggg accacagtca cagtctcctc a 351

<210> 40
<211> 351
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthesized

<400> 40
caggttcagc tggtgcagtc tggagctgag gtgaagaagc ctggggcctc agtgaaggtc 60
tcctgcaagg cttctggtta cacctttacc aattatgata taaattgggt gagacaggcc 120
cctggacaag ggcttgagtg gatgggatgg atttatcctg gagatggtag taccaaatat 180
aatgagaaat tcaaggccag agtcaccatg acagctgaca catccaccag cacagcctac 240
atggagctga ggagcctgag atctgatgac acagctgtgt attactgtgc tagaggatat 300
gaagatgcta tggactactg ggggcaaggg accacagtca cagtctcctc a 351

<210> 41
<211> 351
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthesized

<400> 41
caggttcagc tggtgcagtc tggagctgag gtgaagaagc ctggggcctc agtgaaggtc 60
tcctgcaagg cttctggtta cacctttacc aattatgata taaattgggt gagacaggcc 120
cctggacaag ggcttgagtg gatgggatgg atttatcctg gagatggtag taccaaatat 180
aatgagaaat tcaaggccag agtcaccatg accacagaca catccaccag cacagcctac 240
atggagctga ggagcctgag atctgatgac acagctgtgt attactgtgc ttctggatat 300
gaagatgcta tggactactg ggggcaaggg accacagtca cagtctcctc a 351

<210> 42
<211> 351
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthesized

<400> 42
caggttcagc tggtgcagtc tggagctgag gtgaagaagc ctggggcctc agtgaaggtc 60
tcctgcaagg cttctggtta cacctttacc aattatgata taaattgggt gagacaggcc 120
cctggacaag ggcttgagtg gatgggatgg atttatcctg gagatggtag taccaaatat 180
aatgagaaat tcaaggccag agtcaccatg accacagaca agtccaccag cacagcctac 240
atggagctga ggagcctgag atctgatgac acagctgtgt attactgtgc tagaggatat 300
gaagatgcta tggactactg ggggcaaggg accacagtca cagtctcctc a 351

<210> 43
<211> 351
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthesized

<400> 43
caggttcagc tggtgcagtc tggagctgag gtgaagaagc ctggggcctc agtgaaggtc 60
tcctgcaagg cttctggtta cacctttacc aattatgata taaattgggt gagacaggcc 120
cctggacaag ggcttgagtg gattggatgg atttatcctg gagatggtag taccaaatat 180
aatgagaaat tcaaggccag agtcaccatg accacagaca catccaccag cacagcctac 240
atggagctga ggagcctgag atctgatgac acagctgtgt attactgtgc tagaggatat 300
gaagatgcta tggactactg ggggcaaggg accacagtca cagtctcctc a 351

<210> 44
<211> 351
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthesized

<400> 44
caggttcagc tggtgcagtc tggagctgag gtgaagaagc ctggggcctc agtgaaggtc 60
tcctgcaagg cttctggtta cacctttacc aattatgata taaattgggt gaaccagagg 120
cctggacaag ggcttgagtg gatgggatgg atttatcctg gagatggtag taccaaatat 180
aatgagaaat tcaaggccag agtcaccatg accacagaca catccaccag cacagcctac 240
atggagctga ggagcctgag atctgatgac acagctgtgt attactgtgc tagaggatat 300
gaagatgcta tggactactg ggggcaaggg accacagtca cagtctcctc a 351

<210> 45
<211> 351
<212> DNA

<213> Artificial Sequence

<220>
<223> Synthesized

<400> 45
caggttcagc tggtgcagtc tggagctgag gtgaagaagc ctggggcctc agtgaaggtc 60
tcctgcaagg cttctggtta cacctttacc aattatgata taaattgggt gagacaggcc 120
cctggacaag ggcttgagtg gatgggatgg atttatcctg gagatggtag taccaaatat 180
aatgagaaat tcaaggccaa ggctaccctg accacagaca catccaccag cacagcctac 240
atggagctga ggagcctgag atctgatgac acagctgtgt attactgtgc tagaggatat 300
gaagatgcta tggactactg ggggcaaggg accacagtca cagtctcctc a 351

<210> 46
<211> 351
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthesized

<400> 46
caggttcagc tggtgcagtc tggagctgag gtgaagaagc ctggggcctc agtgaaggtc 60
tcctgcaagg cttctggtta cacctttacc aattatgata taaattgggt gagacaggcc 120
cctggacaag ggcttgagtg gatgggatgg atttatcctg gagatggtag taccaaatat 180
aatgagaaat tcaaggccag agtcaccatg accacagaca catccaccag cacagcctac 240
atggagctga gcagcctgac ctctgatgac acagctgtgt attactgtgc tagaggatat 300
gaagatgcta tggactactg ggggcaaggg accacagtca cagtctcctc a 351

<210> 47
<211> 351
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthesized

<400> 47
caggttcagc tggtgcagtc tggagctgag gtgaagaagc ctggggcctc agtgaaggtc 60
tcctgcaagg cttctggtta cacctttacc aattatgata taaattgggt gagacaggcc 120
cctggacaag ggcttgagtg gattggatgg atttatcctg gagatggtag taccaaatat 180
aatgagaaat tcaaggccaa ggctaccctg acagctgaca catccaccag cacagcctac 240
atggagctga ggagcctgag atctgatgac acagctgtgt attactgtgc ttctggatat 300
gaagatgcta tggactactg ggggcaaggg accacagtca cagtctcctc a 351

<210> 48
<211> 318
<212> DNA
<213> Homo sapiens

<400> 48
acggtggctg caccatctgt cttcatcttc ccgccatctg atgagcagtt gaaatctgga 60
actgcctctg ttgtgtgcct gctgaataac ttctatccca gagaggccaa agtacagtgg 120
aaggtggata acgccctcca atcgggtaac tcccaggaga gtgtcacaga gcaggacagc 180
aaggacagca cctacagcct cagcagcacc ctgacgctga gcaaagcaga ctacgagaaa 240
cacaaagtct acgcctgcga agtcacccat cagggcctga gctcgcccgt cacaaagagc 300
ttcaacaggg gagagtgt 318

<210> 49
<211> 990
<212> DNA
<213> Homo sapiens

<400> 49
gctagcacca agggcccatc tgtcttcccc ctggcaccct cctccaagag cacctctggg 60
ggcacagctg ccctgggctg cctggtcaag gactacttcc ctgaacctgt gacagtgtcc 120
tggaactcag gcgccctgac cagcggcgtg cacaccttcc cggctgtcct acagtcctca 180
ggactctact ccctcagcag cgtggtgacc gtgccctcca gcagcttggg cacccagacc 240

tacatctgca acgtgaatca caagcccagc aacaccaagg tggacaagaa agttgagccc 300
aaatcttgtg acaaaactca cacatgccca ccgtgcccag cacctgaact cctgggggga 360
ccgtcagtct tcctcttccc cccaaaaccc aaggacaccc tcatgatctc ccggacccct 420
gaggtcacat gcgtggtggt ggacgtgagc cacgaagacc ctgaggtcaa gttcaactgg 480
tacgtggacg gcgtggaggt gcataatgcc aagacaaagc cgcgggagga gcagtacaac 540
agcacgtacc gtgtggtcag cgtcctcacc gtcctgcacc aggactggct gaatggcaag 600
gagtacaagt gcaaggtctc caacaaagcc ctcccagccc ccatcgagaa aaccatctcc 660
aaagccaaag ggcagccccg agaaccacag gtgtacaccc tgccccatc ccgggatgag 720
ctgaccaaga accaggtcag cctgacctgc ctggtcaaag gcttctatcc cagcgacatc 780
gccgtggagt gggagagcaa tgggcagccg gagaacaact acaagaccac gcctcccgtg 840
ctggactccg acggctcctt cttcctctac agcaagctca ccgtggacaa gagcaggtgg 900
cagcagggga acgtcttctc atgctccgtg atgcatgagg ctctgcacaa ccactacaca 960
cagaagagcc tctccctgtc tccgggtaaa 990

<210> 50
<211> 987
<212> DNA
<213> Homo sapiens

<400> 50
gctagcacca agggcccatc tgtcttcccc ctggcaccct cctccaagag cacctctggg 60
ggcacagctg ccctgggctg cctggtcaag gactacttcc ctgaacctgt gacagtgtcc 120
tggaactcag gcgccctgac cagcggcgtg cacaccttcc cggctgtcct acagtcctca 180
ggactctact ccctcagcag cgtggtgacc gtgccctcca gcagcttggg cacccagacc 240
tacatctgca acgtgaatca caagcccagc aacaccaagg tggacaagaa agttgagccc 300
aaatcttgtg acaaaactca cacatgccca ccgtgcccag cacctgaact cctgggggga 360
ccgtcagtct tcctcttccc cccaaaaccc aaggacaccc tcatgatctc ccggacccct 420
gaggtcacat gcgtggtggt ggacgtgagc cacgaagacc ctgaggtcaa gttcaactgg 480
tacgtggacg gcgtggaggt gcataatgcc aagacaaagc cgcgggagga gcagtacaac 540
agcacgtacc gtgtggtcag cgtcctcacc gtcctgcacc aggactggct gaatggcaag 600
gagtacaagt gcaaggtctc caacaaagcc ctcccagccc ccatcgagaa aaccatctcc 660
aaagccaaag ggcagccccg agaaccacag gtgtacaccc tgccccatc ccgggatgag 720
ctgaccaaga accaggtcag cctgacctgc ctggtcaaag gcttctatcc cagcgacatc 780
gccgtggagt gggagagcaa tgggcagccg gagaacaact acaagaccac gcctcccgtg 840
ctggactccg acggctcctt cttcctctac agcaagctca ccgtggacaa gagcaggtgg 900
cagcagggga acgtcttctc atgctccgtg atgcatgagg ctctgcacaa ccactacaca 960
cagaagagcc tctccctgtc tccgggt 987

<210> 51
<211> 990
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthesized

<400> 51
gctagcacca agggcccatc tgtcttcccc ctggcaccct cctccaagag cacctctggg 60
ggcacagctg ccctgggctg cctggtcaag gactacttcc ctgaacctgt gacagtgtcc 120
tggaactcag gcgccctgac cagcggcgtg cacaccttcc cggctgtcct acagtcctca 180
ggactctact ccctcagcag cgtggtgacc gtgccctcca gcagcttggg cacccagacc 240
tacatctgca acgtgaatca caagcccagc aacaccaagg tggacaagaa agttgagccc 300
aaatcttgtg acaaaactca cacatgccca ccgtgcccag cacctgaact cctgggggga 360
ccgtgtgtct tcctcttccc cccaaaaccc aaggacaccc tcatgatctc ccggacccct 420
gaggtcacat gcgtggtggt ggacgtgagc cacgaagacc ctgaggtcaa gttcaactgg 480
tacgtggacg gcgtggaggt gcataatgcc aagacaaagc cgcgggagga gcagtacaac 540
agcacgtacc gtgtggtcag cgtcctcacc gtcctgcacc aggactggct gaatggcaag 600
gagtacaagt gcaaggtctc caacaaagcc ctcccagccc ccatcgagaa aaccatctcc 660
aaagccaaag ggcagccccg agaaccacag gtgtacaccc tgccccatc ccgggatgag 720
ctgaccaaga accaggtcag cctgacctgc ctggtcaaag gcttctatcc cagcgacatc 780
gccgtggagt gggagagcaa tgggcagccg gagaacaact acaagaccac gcctcccgtg 840
ctggactccg acggctcctt cttcctctac agcaagctca ccgtggacaa gagcaggtgg 900
cagcagggga acgtcttctc atgctccgtg atgcatgagg ctctgcacaa ccactacaca 960
cagaagagcc tctccctgtc tccgggtaaa 990

<210> 52
<211> 987
<212> DNA

<213> Artificial Sequence

<220>
<223> Synthesized

<400> 52
gctagcacca agggcccatc tgtcttcccc ctggcaccct cctccaagag cacctctggg 60
ggcacagctg ccctgggctg cctggtcaag gactacttcc ctgaacctgt gacagtgtcc 120
tggaactcag gcgccctgac cagcggcgtg cacaccttcc cggctgtcct acagtcctca 180
ggactctact ccctcagcag cgtggtgacc gtgccctcca gcagcttggg cacccagacc 240
tacatctgca acgtgaatca caagcccagc aacaccaagg tggacaagaa agttgagccc 300
aaatcttgtg acaaaactca cacatgccca ccgtgcccag cacctgaact cctgggggga 360
ccgtgtgtct tcctcttccc cccaaaaccc aaggacaccc tcatgatctc ccggacccct 420
gaggtcacat gcgtggtggt ggacgtgagc cacgaagacc ctgaggtcaa gttcaactgg 480
tacgtggacg gcgtggaggt gcataatgcc aagacaaagc cgcgggagga gcagtacaac 540
agcacgtacc gtgtggtcag cgtcctcacc gtcctgcacc aggactggct gaatggcaag 600
gagtacaagt gcaaggtctc caacaaagcc ctcccagccc ccatcgagaa aaccatctcc 660
aaagccaaag ggcagccccg agaaccacag gtgtacaccc tgccccatc ccgggatgag 720
ctgaccaaga accaggtcag cctgacctgc ctggtcaaag gcttctatcc cagcgacatc 780
gccgtggagt gggagagcaa tgggcagccg gagaacaact acaagaccac gcctcccgtg 840
ctggactccg acggctcctt cttcctctac agcaagctca ccgtggacaa gagcaggtgg 900
cagcagggga acgtcttctc atgctccgtg atgcatgagg ctctgcacaa ccactacaca 960
cagaagagcc tctccctgtc tccgggt 987

<210> 53
<211> 66
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthesized

<400> 53
atggacatga ggacccctgc tcagtttctt ggaatcttgt tgctctggtt tccaggtatc 60
aaatgt 66

<210> 54
<211> 57
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthesized

<400> 54
atgggatgga gatggatctt tcttttcctc ctgtcgggaa ctgcaggtgt ccattgc 57

<210> 55
<211> 364
<212> PRT
<213> Homo sapiens

<400> 55
Met Pro Leu Leu Leu Leu Leu Pro Leu Leu Trp Ala Gly Ala Leu Ala
 1   5   10   15
Met Asp Pro Asn Phe Trp Leu Gln Val Gln Glu Ser Val Thr Val Gln
            20   25   30
Glu Gly Leu Cys Val Leu Val Pro Cys Thr Phe Phe His Pro Ile Pro
        35   40   45
Tyr Tyr Asp Lys Asn Ser Pro Val His Gly Tyr Trp Phe Arg Glu Gly
    50   55   60
Ala Ile Ile Ser Arg Asp Ser Pro Val Ala Thr Asn Lys Leu Asp Gln
65   70   75   80
Glu Val Gln Glu Glu Thr Gln Gly Arg Phe Arg Leu Leu Gly Asp Pro
                85   90   95
Ser Arg Asn Asn Cys Ser Leu Ser Ile Val Asp Ala Arg Arg Arg Asp
            100   105   110
Asn Gly Ser Tyr Phe Phe Arg Met Glu Arg Gly Ser Thr Lys Tyr Ser

```
        115                 120                 125
Tyr Lys Ser Pro Gln Leu Ser Val His Val Thr Asp Leu Thr His Arg
    130                 135                 140
Pro Lys Ile Leu Ile Pro Gly Thr Leu Glu Pro Gly His Ser Lys Asn
145                 150                 155                 160
Leu Thr Cys Ser Val Ser Trp Ala Cys Glu Gln Gly Thr Pro Pro Ile
                165                 170                 175
Phe Ser Trp Leu Ser Ala Ala Pro Thr Ser Leu Gly Pro Arg Thr Thr
            180                 185                 190
His Ser Ser Val Leu Ile Ile Thr Pro Arg Pro Gln Asp His Gly Thr
        195                 200                 205
Asn Leu Thr Cys Gln Val Lys Phe Ala Gly Ala Gly Val Thr Thr Glu
    210                 215                 220
Arg Thr Ile Gln Leu Asn Val Thr Tyr Val Pro Gln Asn Pro Thr Thr
225                 230                 235                 240
Gly Ile Phe Pro Gly Asp Gly Ser Gly Lys Gln Glu Thr Arg Ala Gly
                245                 250                 255
Val Val His Gly Ala Ile Gly Gly Ala Gly Val Thr Ala Leu Leu Ala
            260                 265                 270
Leu Cys Leu Cys Leu Ile Phe Phe Ile Val Lys Thr His Arg Arg Lys
        275                 280                 285
Ala Ala Arg Thr Ala Val Gly Arg Asn Asp Thr His Pro Thr Thr Gly
    290                 295                 300
Ser Ala Ser Pro Lys His Gln Lys Lys Ser Lys Leu His Gly Pro Thr
305                 310                 315                 320
Glu Thr Ser Ser Cys Ser Gly Ala Ala Pro Thr Val Glu Met Asp Glu
                325                 330                 335
Glu Leu His Tyr Ala Ser Leu Asn Phe His Gly Met Asn Pro Ser Lys
            340                 345                 350
Asp Thr Ser Thr Glu Tyr Ser Glu Val Arg Thr Gln
        355                 360
```

<210> 56
<211> 359
<212> PRT
<213> Macaca fascicularis

<400> 56

```
Met Pro Leu Leu Leu Leu Pro Leu Leu Trp Ala Gly Ala Leu Ala Met
 1               5                  10                  15
Asp Pro Arg Val Arg Leu Glu Val Gln Glu Ser Val Thr Val Gln Glu
            20                  25                  30
Gly Leu Cys Val Leu Val Pro Cys Thr Phe Phe His Pro Val Pro Tyr
        35                  40                  45
His Thr Arg Asn Ser Pro Val His Gly Tyr Trp Phe Arg Glu Gly Ala
    50                  55                  60
Ile Val Ser Leu Asp Ser Pro Val Ala Thr Asn Lys Leu Asp Gln Glu
65                  70                  75                  80
Val Gln Glu Glu Thr Gln Gly Arg Phe Arg Leu Leu Gly Asp Pro Ser
                85                  90                  95
Arg Asn Asn Cys Ser Leu Ser Ile Val Asp Ala Arg Arg Arg Asp Asn
            100                 105                 110
Gly Ser Tyr Phe Phe Arg Met Glu Lys Gly Ser Thr Lys Tyr Ser Tyr
        115                 120                 125
Lys Ser Thr Gln Leu Ser Val His Val Thr Asp Leu Thr His Arg Pro
    130                 135                 140
Gln Ile Leu Ile Pro Gly Ala Leu Asp Pro Asp His Ser Lys Asn Leu
145                 150                 155                 160
Thr Cys Ser Val Pro Trp Ala Cys Glu Gln Gly Thr Pro Pro Ile Phe
                165                 170                 175
Ser Trp Met Ser Ala Ala Pro Thr Ser Leu Gly Leu Arg Thr Thr His
            180                 185                 190
Ser Ser Val Leu Ile Ile Thr Pro Arg Pro Gln Asp His Gly Thr Asn
        195                 200                 205
Leu Thr Cys Gln Val Lys Phe Pro Gly Ala Gly Val Thr Thr Glu Arg
    210                 215                 220
Thr Ile Gln Leu Asn Val Ser Tyr Ala Ser Gln Asn Pro Arg Thr Asp
```

225 230 235 240
Ile Phe Leu Gly Asp Gly Ser Gly Lys Gln Gly Val Val Gln Gly Ala
245 250 255
Ile Gly Gly Ala Gly Val Thr Val Leu Leu Ala Leu Cys Leu Cys Leu
260 265 270
Ile Phe Phe Thr Val Lys Thr His Arg Arg Lys Ala Ala Arg Thr Ala
275 280 285
Val Gly Arg Ile Asp Thr His Pro Ala Thr Gly Pro Thr Ser Ser Lys
290 295 300
His Gln Lys Lys Ser Lys Leu His Gly Ala Thr Glu Thr Ser Gly Cys
305 310 315 320
Ser Gly Thr Thr Leu Thr Val Glu Met Asp Glu Glu Leu His Tyr Ala
325 330 335
Ser Leu Asn Phe His Gly Met Asn Pro Ser Glu Asp Thr Ser Thr Glu
340 345 350
Tyr Ser Glu Val Arg Thr Gln
355

<210> 57
<211> 359
<212> PRT
<213> Macaca fascicularis

<400> 57
Met Pro Leu Leu Leu Leu Pro Leu Leu Trp Ala Gly Ala Leu Ala Met
1 5 10 15
Asp Pro Arg Val Arg Leu Glu Val Gln Glu Ser Val Thr Val Gln Glu
20 25 30
Gly Leu Cys Val Leu Val Pro Cys Thr Phe Phe His Pro Val Pro Tyr
35 40 45
His Ala Arg Asn Ser Pro Val His Gly Tyr Trp Phe Arg Glu Gly Ala
50 55 60
Ile Val Ser Leu Asp Ser Pro Val Ala Thr Asn Lys Leu Asp Gln Glu
65 70 75 80
Val Arg Glu Glu Thr Gln Gly Arg Phe Arg Leu Leu Gly Asp Pro Ser
85 90 95
Arg Asn Asn Cys Ser Leu Ser Ile Val Asp Ala Arg Arg Arg Asp Asn
100 105 110
Gly Ser Tyr Phe Phe Arg Met Glu Lys Gly Ser Thr Lys Tyr Ser Tyr
115 120 125
Lys Ser Thr Gln Leu Ser Val His Val Thr Asp Leu Thr His Arg Pro
130 135 140
Gln Ile Leu Ile Pro Gly Ala Leu Asp Pro Asp His Ser Lys Asn Leu
145 150 155 160
Thr Cys Ser Val Pro Trp Ala Cys Glu Gln Gly Thr Pro Pro Ile Phe
165 170 175
Ser Trp Met Ser Ala Ala Pro Thr Ser Leu Gly Leu Arg Thr Thr His
180 185 190
Ser Ser Val Leu Ile Ile Thr Pro Arg Pro Gln Asp His Gly Thr Asn
195 200 205
Leu Thr Cys Gln Val Lys Phe Pro Gly Ala Gly Val Thr Thr Glu Arg
210 215 220
Thr Ile Gln Leu Asn Val Ser Tyr Ala Ser Gln Asn Pro Arg Thr Asp
225 230 235 240
Ile Phe Leu Gly Asp Gly Ser Gly Lys Gln Gly Val Val Gln Gly Ala
245 250 255
Ile Gly Gly Ala Gly Val Thr Val Leu Leu Ala Leu Cys Leu Cys Leu
260 265 270
Ile Phe Phe Thr Val Lys Thr His Arg Arg Lys Ala Ala Arg Thr Ala
275 280 285
Val Gly Arg Ile Asp Thr His Pro Ala Thr Gly Pro Thr Ser Ser Lys
290 295 300
His Gln Lys Lys Ser Lys Leu His Gly Ala Thr Glu Thr Ser Gly Cys
305 310 315 320
Ser Gly Thr Thr Leu Thr Val Glu Met Asp Glu Glu Leu His Tyr Ala
325 330 335
Ser Leu Asn Phe His Gly Met Asn Pro Ser Glu Asp Thr Ser Thr Glu

340 345 350

Tyr Ser Glu Val Arg Thr Gln
355