SEQUENCE LISTING

<110> ALLOGENE THERAPEUTICS, INC.

<120> INDUCIBLE CHIMERIC CYTOKINE RECEPTORS

<130> ALGN-016/01WO 333466-2243

<150> US 62/637,600
<151> 2018-03-02

<160> 311

<170> PatentIn version 3.5

<210> 1
<211> 422
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-Myc-FKBP(F36V)-EpoR(237-508;L241G,L242P)-V5

<400> 1

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Met
20 25 30

Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
35 40 45

Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
50 55 60

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

Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
85 90 95

Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
100 105 110

Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr

```
        115                 120                 125

Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val Ser
    130                 135                 140

Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser Leu
145                 150                 155                 160

Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu Ser
                165                 170                 175

His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser Pro
            180                 185                 190

Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe Gln
        195                 200                 205

Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys Thr
    210                 215                 220

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

Cys Trp Gly Thr Met Gln Ala Val Glu Pro Gly Thr Asp Asp Glu Gly
                245                 250                 255

Pro Leu Leu Glu Pro Val Gly Ser Glu His Ala Gln Asp Thr Tyr Leu
            260                 265                 270

Val Leu Asp Lys Trp Leu Leu Pro Arg Asn Pro Pro Ser Glu Asp Leu
        275                 280                 285

Pro Gly Pro Gly Gly Ser Val Asp Ile Val Ala Met Asp Glu Gly Ser
    290                 295                 300

Glu Ala Ser Ser Cys Ser Ser Ala Leu Ala Ser Lys Pro Ser Pro Glu
305                 310                 315                 320

Gly Ala Ser Ala Ala Ser Phe Glu Tyr Thr Ile Leu Asp Pro Ser Ser
                325                 330                 335
```

```
Gln Leu Leu Arg Pro Trp Thr Leu Cys Pro Glu Leu Pro Pro Thr Pro
            340                 345                 350

Pro His Leu Lys Tyr Leu Tyr Leu Val Val Ser Asp Ser Gly Ile Ser
        355                 360                 365

Thr Asp Tyr Ser Ser Gly Asp Ser Gln Gly Ala Gln Gly Gly Leu Ser
    370                 375                 380

Asp Gly Pro Tyr Ser Asn Pro Tyr Glu Asn Ser Leu Ile Pro Ala Ala
385                 390                 395                 400

Glu Pro Leu Pro Pro Ser Tyr Val Ala Cys Ser Ile Pro Asn Pro Leu
                405                 410                 415

Leu Gly Leu Asp Ser Thr
            420
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<210> 2
<211> 461
<212> PRT
<213> Artificial Sequence

<220>
<223> V5-EpoR(273-508)-FKBP(F36V)-FKBP(F36V)

<400> 2

```
Ile Pro Asn Pro Leu Leu Gly Leu Asp Ser Thr Ser His Arg Arg Ala
1               5                   10                  15

Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser Pro Glu Ser Glu Phe
            20                  25                  30

Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe Gln Leu Trp Leu Tyr
        35                  40                  45

Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys Thr Pro Phe Thr Glu
    50                  55                  60

Asp Pro Pro Ala Ser Leu Glu Val Leu Ser Glu Arg Cys Trp Gly Thr
65                  70                  75                  80
```

```
Met Gln Ala Val Glu Pro Gly Thr Asp Asp Glu Gly Pro Leu Leu Glu
                85                  90                  95

Pro Val Gly Ser Glu His Ala Gln Asp Thr Tyr Leu Val Leu Asp Lys
            100                 105                 110

Trp Leu Leu Pro Arg Asn Pro Pro Ser Glu Asp Leu Pro Gly Pro Gly
        115                 120                 125

Gly Ser Val Asp Ile Val Ala Met Asp Glu Gly Ser Glu Ala Ser Ser
    130                 135                 140

Cys Ser Ser Ala Leu Ala Ser Lys Pro Ser Pro Glu Gly Ala Ser Ala
145                 150                 155                 160

Ala Ser Phe Glu Tyr Thr Ile Leu Asp Pro Ser Ser Gln Leu Leu Arg
                165                 170                 175

Pro Trp Thr Leu Cys Pro Glu Leu Pro Pro Thr Pro Pro His Leu Lys
            180                 185                 190

Tyr Leu Tyr Leu Val Val Ser Asp Ser Gly Ile Ser Thr Asp Tyr Ser
        195                 200                 205

Ser Gly Asp Ser Gln Gly Ala Gln Gly Gly Leu Ser Asp Gly Pro Tyr
    210                 215                 220

Ser Asn Pro Tyr Glu Asn Ser Leu Ile Pro Ala Ala Glu Pro Leu Pro
225                 230                 235                 240

Pro Ser Tyr Val Ala Cys Ser Met Gly Val Gln Val Glu Thr Ile Ser
                245                 250                 255

Pro Gly Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val
            260                 265                 270

His Tyr Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg
        275                 280                 285

Asp Arg Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile
```

290 295 300

Arg Gly Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala
305 310 315 320

Lys Leu Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro
325 330 335

Gly Ile Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu
340 345 350

Lys Leu Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr
355 360 365

Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu
370 375 380

Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe
385 390 395 400

Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly
405 410 415

Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro
420 425 430

Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His
435 440 445

Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu
450 455 460

<210> 3
<211> 461
<212> PRT
<213> Artificial Sequence

<220>
<223> V5-EpoR(273-508)-FKBP(E31G,36V,R71G,K105E)-FKBP(E31G,36V,R71G,K10
5E)

<400> 3

```
Ile Pro Asn Pro Leu Leu Gly Leu Asp Ser Thr Ser His Arg Arg Ala
1               5                  10                  15

Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser Pro Glu Ser Glu Phe
            20                  25                  30

Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe Gln Leu Trp Leu Tyr
        35                  40                  45

Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys Thr Pro Phe Thr Glu
    50                  55                  60

Asp Pro Pro Ala Ser Leu Glu Val Leu Ser Glu Arg Cys Trp Gly Thr
65                  70                  75                  80

Met Gln Ala Val Glu Pro Gly Thr Asp Asp Glu Gly Pro Leu Leu Glu
                85                  90                  95

Pro Val Gly Ser Glu His Ala Gln Asp Thr Tyr Leu Val Leu Asp Lys
            100                 105                 110

Trp Leu Leu Pro Arg Asn Pro Pro Ser Glu Asp Leu Pro Gly Pro Gly
        115                 120                 125

Gly Ser Val Asp Ile Val Ala Met Asp Glu Gly Ser Glu Ala Ser Ser
    130                 135                 140

Cys Ser Ser Ala Leu Ala Ser Lys Pro Ser Pro Glu Gly Ala Ser Ala
145                 150                 155                 160

Ala Ser Phe Glu Tyr Thr Ile Leu Asp Pro Ser Ser Gln Leu Leu Arg
                165                 170                 175

Pro Trp Thr Leu Cys Pro Glu Leu Pro Pro Thr Pro Pro His Leu Lys
            180                 185                 190

Tyr Leu Tyr Leu Val Val Ser Asp Ser Gly Ile Ser Thr Asp Tyr Ser
        195                 200                 205

Ser Gly Asp Ser Gln Gly Ala Gln Gly Gly Leu Ser Asp Gly Pro Tyr
    210                 215                 220
```

```
Ser Asn Pro Tyr Glu Asn Ser Leu Ile Pro Ala Ala Glu Pro Leu Pro
225                 230                 235                 240

Pro Ser Tyr Val Ala Cys Ser Met Gly Val Gln Val Glu Thr Ile Ser
                245                 250                 255

Pro Gly Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val
            260                 265                 270

His Tyr Thr Gly Met Leu Gly Asp Gly Lys Lys Val Asp Ser Ser Arg
        275                 280                 285

Asp Arg Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile
    290                 295                 300

Arg Gly Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Gly Ala
305                 310                 315                 320

Lys Leu Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro
                325                 330                 335

Gly Ile Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu
            340                 345                 350

Glu Leu Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr
        355                 360                 365

Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu
    370                 375                 380

Gly Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe
385                 390                 395                 400

Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly
                405                 410                 415

Val Ala Gln Met Ser Val Gly Gln Gly Ala Lys Leu Thr Ile Ser Pro
            420                 425                 430
```

Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His
435 440 445

Ala Thr Leu Val Phe Asp Val Glu Leu Leu Glu Leu Glu
450 455 460

<210> 4
<211> 527
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-Myc-FKBP(F36V)-EpoR(237-338;L241G,L242P)-GHR(353-638)

<400> 4

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Met
20 25 30

Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
35 40 45

Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
50 55 60

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

Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
85 90 95

Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
100 105 110

Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
115 120 125

Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val Ser
130 135 140

```
Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser Leu
145                 150                 155                 160


Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu Ser
                165                 170                 175


His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser Pro
            180                 185                 190


Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe Gln
        195                 200                 205


Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys Thr
    210                 215                 220


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


Cys Pro Asp Glu Lys Thr Glu Glu Ser Asp Thr Asp Arg Leu Leu Ser
                245                 250                 255


Ser Asp His Glu Lys Ser His Ser Asn Leu Gly Val Lys Asp Gly Asp
            260                 265                 270


Ser Gly Arg Thr Ser Cys Cys Glu Pro Asp Ile Leu Glu Thr Asp Phe
        275                 280                 285


Asn Ala Asn Asp Ile His Glu Gly Thr Ser Glu Val Ala Gln Pro Gln
    290                 295                 300


Arg Leu Lys Gly Glu Ala Asp Leu Leu Cys Leu Asp Gln Lys Asn Gln
305                 310                 315                 320


Asn Asn Ser Pro Tyr His Asp Ala Cys Pro Ala Thr Gln Gln Pro Ser
                325                 330                 335


Val Ile Gln Ala Glu Lys Asn Lys Pro Gln Pro Leu Pro Thr Glu Gly
            340                 345                 350


Ala Glu Ser Thr His Gln Ala Ala His Ile Gln Leu Ser Asn Pro Ser
        355                 360                 365
```

```
Ser Leu Ser Asn Ile Asp Phe Tyr Ala Gln Val Ser Asp Ile Thr Pro
    370                 375                 380

Ala Gly Ser Val Val Leu Ser Pro Gly Gln Lys Asn Lys Ala Gly Met
385                 390                 395                 400

Ser Gln Cys Asp Met His Pro Glu Met Val Ser Leu Cys Gln Glu Asn
                405                 410                 415

Phe Leu Met Asp Asn Ala Tyr Phe Cys Glu Ala Asp Ala Lys Lys Cys
            420                 425                 430

Ile Pro Val Ala Pro His Ile Lys Val Glu Ser His Ile Gln Pro Ser
        435                 440                 445

Leu Asn Gln Glu Asp Ile Tyr Ile Thr Thr Glu Ser Leu Thr Thr Ala
    450                 455                 460

Ala Gly Arg Pro Gly Thr Gly Glu His Val Pro Gly Ser Glu Met Pro
465                 470                 475                 480

Val Pro Asp Tyr Thr Ser Ile His Ile Val Gln Ser Pro Gln Gly Leu
                485                 490                 495

Ile Leu Asn Ala Thr Ala Leu Pro Leu Pro Asp Lys Glu Phe Leu Ser
            500                 505                 510

Ser Cys Gly Tyr Val Ser Thr Asp Gln Leu Asn Lys Ile Met Pro
        515                 520                 525
```

<210> 5
<211> 460
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-Myc-FKBP(F36V)-EpoR(237-338;L241G,L242P)-IL2Rb(333-551)

<400> 5

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                   10                  15
```

```
His Ala Ala Arg Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Met
            20                  25                  30

Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
        35                  40                  45

Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
    50                  55                  60

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

Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
                85                  90                  95

Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
            100                 105                 110

Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
        115                 120                 125

Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val Ser
    130                 135                 140

Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser Leu
145                 150                 155                 160

Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu Ser
                165                 170                 175

His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser Pro
            180                 185                 190

Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe Gln
        195                 200                 205

Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys Thr
    210                 215                 220
```

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

Cys Val Thr Gln Leu Leu Leu Gln Gln Asp Lys Val Pro Glu Pro Ala
                245                 250                 255

Ser Leu Ser Ser Asn His Ser Leu Thr Ser Cys Phe Thr Asn Gln Gly
            260                 265                 270

Tyr Phe Phe Phe His Leu Pro Asp Ala Leu Glu Ile Glu Ala Cys Gln
        275                 280                 285

Val Tyr Phe Thr Tyr Asp Pro Tyr Ser Glu Glu Asp Pro Asp Glu Gly
    290                 295                 300

Val Ala Gly Ala Pro Thr Gly Ser Ser Pro Gln Pro Leu Gln Pro Leu
305                 310                 315                 320

Ser Gly Glu Asp Asp Ala Tyr Cys Thr Phe Pro Ser Arg Asp Asp Leu
                325                 330                 335

Leu Leu Phe Ser Pro Ser Leu Leu Gly Gly Pro Ser Pro Pro Ser Thr
            340                 345                 350

Ala Pro Gly Gly Ser Gly Ala Gly Glu Glu Arg Met Pro Pro Ser Leu
        355                 360                 365

Gln Glu Arg Val Pro Arg Asp Trp Asp Pro Gln Pro Leu Gly Pro Pro
    370                 375                 380

Thr Pro Gly Val Pro Asp Leu Val Asp Phe Gln Pro Pro Pro Glu Leu
385                 390                 395                 400

Val Leu Arg Glu Ala Gly Glu Glu Val Pro Asp Ala Gly Pro Arg Glu
                405                 410                 415

Gly Val Ser Phe Pro Trp Ser Arg Pro Pro Gly Gln Gly Glu Phe Arg
            420                 425                 430

Ala Leu Asn Ala Arg Leu Pro Leu Asn Thr Asp Ala Tyr Leu Ser Leu
        435                 440                 445
```

```
Gln Glu Leu Gln Gly Gln Asp Pro Thr His Leu Val
    450                 455                 460


<210>  6
<211>  385
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  CD8 SS-Myc-FKBP(F36V)-EpoR(237-338;L241G,L242P)-IL7R(316-459)

<400>  6

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                   10                  15


His Ala Ala Arg Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Met
            20                  25                  30


Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
        35                  40                  45


Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
    50                  55                  60


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


Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
                85                  90                  95


Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
            100                 105                 110


Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
        115                 120                 125


Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val Ser
    130                 135                 140


Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser Leu
145                 150                 155                 160
```

```
Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu Ser
                165                 170                 175

His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser Pro
            180                 185                 190

Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe Gln
        195                 200                 205

Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys Thr
    210                 215                 220

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

Cys Ala Arg Asp Glu Val Glu Gly Phe Leu Gln Asp Thr Phe Pro Gln
                245                 250                 255

Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly Asp Val Gln Ser
            260                 265                 270

Pro Asn Cys Pro Ser Glu Asp Val Val Ile Thr Pro Glu Ser Phe Gly
        275                 280                 285

Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn Val Ser Ala Cys Asp
    290                 295                 300

Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg Glu Ser Gly
305                 310                 315                 320

Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu Ser Leu Gly Thr
                325                 330                 335

Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln Ser Gly Ile Leu
            340                 345                 350

Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu Thr Ser Leu Gly
        355                 360                 365
```

Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln Asn
370 375 380

Gln
385

<210> 7
<211> 390
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-Myc-FKBP(F36V)-EpoR(237-338;L241G,L242P)-IL12Rb2(714-862)

<400> 7

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Met
20 25 30

Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
35 40 45

Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
50 55 60

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

Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
85 90 95

Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
100 105 110

Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
115 120 125

Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val Ser
130 135 140

```
Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser Leu
145                 150                 155                 160

Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu Ser
                165                 170                 175

His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser Pro
            180                 185                 190

Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe Gln
        195                 200                 205

Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys Thr
    210                 215                 220

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

Cys Val Thr Pro Val Phe Arg His Pro Pro Cys Ser Asn Trp Pro Gln
                245                 250                 255

Arg Glu Lys Gly Ile Gln Gly His Gln Ala Ser Glu Lys Asp Met Met
            260                 265                 270

His Ser Ala Ser Ser Pro Pro Pro Pro Arg Ala Leu Gln Ala Glu Ser
        275                 280                 285

Arg Gln Leu Val Asp Leu Tyr Lys Val Leu Glu Ser Arg Gly Ser Asp
    290                 295                 300

Pro Lys Pro Glu Asn Pro Ala Cys Pro Trp Thr Val Leu Pro Ala Gly
305                 310                 315                 320

Asp Leu Pro Thr His Asp Gly Tyr Leu Pro Ser Asn Ile Asp Asp Leu
                325                 330                 335

Pro Ser His Glu Ala Pro Leu Ala Asp Ser Leu Glu Glu Leu Glu Pro
            340                 345                 350

Gln His Ile Ser Leu Ser Val Phe Pro Ser Ser Ser Leu His Pro Leu
        355                 360                 365
```

Thr Phe Ser Cys Gly Asp Lys Leu Thr Leu Asp Gln Leu Lys Met Arg
370 375 380

Cys Asp Ser Leu Met Leu
385 390

<210> 8
<211> 292
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-Myc-FKBP(F36V)-EpoR(237-338;L241G,L242P)-IL12Rb2(775-825)

<400> 8

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Met
20 25 30

Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
35 40 45

Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
50 55 60

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

Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
85 90 95

Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
100 105 110

Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
115 120 125

Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val Ser
130 135 140

```
Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser Leu
145                 150                 155                 160


Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu Ser
                165                 170                 175


His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser Pro
            180                 185                 190


Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe Gln
        195                 200                 205


Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys Thr
    210                 215                 220


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


Cys Ser Asp Pro Lys Pro Glu Asn Pro Ala Cys Pro Trp Thr Val Leu
                245                 250                 255


Pro Ala Gly Asp Leu Pro Thr His Asp Gly Tyr Leu Pro Ser Asn Ile
            260                 265                 270


Asp Asp Leu Pro Ser His Glu Ala Pro Leu Ala Asp Ser Leu Glu Glu
        275                 280                 285


Leu Glu Pro Gln
    290
```

<210> 9
<211> 458
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-Myc-FKBP(F36V)-EpoR(237-338;L241G,L242P)-IL21R(322-538)

<400> 9

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                   10                  15
```

```
His Ala Ala Arg Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Met
            20                  25                  30

Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
        35                  40                  45

Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
    50                  55                  60

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

Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
                85                  90                  95

Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
            100                 105                 110

Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
        115                 120                 125

Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val Ser
    130                 135                 140

Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser Leu
145                 150                 155                 160

Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu Ser
                165                 170                 175

His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser Pro
            180                 185                 190

Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe Gln
        195                 200                 205

Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys Thr
    210                 215                 220
```

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

Cys Pro Arg Ser Pro Ala Lys Arg Leu Gln Leu Thr Glu Leu Gln Glu
                245                 250                 255

Pro Ala Glu Leu Val Glu Ser Asp Gly Val Pro Lys Pro Ser Phe Trp
            260                 265                 270

Pro Thr Ala Gln Asn Ser Gly Gly Ser Ala Tyr Ser Glu Glu Arg Asp
        275                 280                 285

Arg Pro Tyr Gly Leu Val Ser Ile Asp Thr Val Thr Val Leu Asp Ala
    290                 295                 300

Glu Gly Pro Cys Thr Trp Pro Cys Ser Cys Glu Asp Asp Gly Tyr Pro
305                 310                 315                 320

Ala Leu Asp Leu Asp Ala Gly Leu Glu Pro Ser Pro Gly Leu Glu Asp
                325                 330                 335

Pro Leu Leu Asp Ala Gly Thr Thr Val Leu Ser Cys Gly Cys Val Ser
            340                 345                 350

Ala Gly Ser Pro Gly Leu Gly Gly Pro Leu Gly Ser Leu Leu Asp Arg
        355                 360                 365

Leu Lys Pro Pro Leu Ala Asp Gly Glu Asp Trp Ala Gly Gly Leu Pro
    370                 375                 380

Trp Gly Gly Arg Ser Pro Gly Gly Val Ser Glu Ser Glu Ala Gly Ser
385                 390                 395                 400

Pro Leu Ala Gly Leu Asp Met Asp Thr Phe Asp Ser Gly Phe Val Gly
                405                 410                 415

Ser Asp Cys Ser Ser Pro Val Glu Cys Asp Phe Thr Ser Pro Gly Asp
            420                 425                 430

Glu Gly Pro Pro Arg Ser Tyr Leu Arg Gln Trp Val Val Ile Pro Pro
        435                 440                 445
```

Pro Leu Ser Ser Pro Gly Pro Gln Ala Ser
450 455

<210> 10
<211> 447
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-Myc-FKBP(F36V)-EpoR(237-338;L241G,L242P)-IFNAR2(310-515)

<400> 10

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Met
20 25 30

Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
35 40 45

Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
50 55 60

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

Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
85 90 95

Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
100 105 110

Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
115 120 125

Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val Ser
130 135 140

Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser Leu
145 150 155 160

```
Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu Ser
                165                 170                 175

His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser Pro
            180                 185                 190

Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe Gln
        195                 200                 205

Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys Thr
    210                 215                 220

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

Cys Lys Lys Lys Val Trp Asp Tyr Asn Tyr Asp Asp Glu Ser Asp Ser
                245                 250                 255

Asp Thr Glu Ala Ala Pro Arg Thr Ser Gly Gly Gly Tyr Thr Met His
            260                 265                 270

Gly Leu Thr Val Arg Pro Leu Gly Gln Ala Ser Ala Thr Ser Thr Glu
        275                 280                 285

Ser Gln Leu Ile Asp Pro Glu Ser Glu Glu Glu Pro Asp Leu Pro Glu
    290                 295                 300

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

Glu Leu Leu Ser Gly Pro Cys Glu Arg Arg Lys Ser Pro Leu Gln Asp
                325                 330                 335

Pro Phe Pro Glu Glu Asp Tyr Ser Ser Thr Glu Gly Ser Gly Gly Arg
            340                 345                 350

Ile Thr Phe Asn Val Asp Leu Asn Ser Val Phe Leu Arg Val Leu Asp
        355                 360                 365
```

```
Asp Glu Asp Ser Asp Asp Leu Glu Ala Pro Leu Met Leu Ser Ser His
    370                 375                 380

Leu Glu Glu Met Val Asp Pro Glu Asp Pro Asp Asn Val Gln Ser Asn
385                 390                 395                 400

His Leu Leu Ala Ser Gly Glu Gly Thr Gln Pro Thr Phe Pro Ser Pro
                405                 410                 415

Ser Ser Glu Gly Leu Trp Ser Glu Asp Ala Pro Ser Asp Gln Ser Asp
            420                 425                 430

Thr Ser Glu Ser Asp Val Asp Leu Gly Asp Gly Tyr Ile Met Arg
        435                 440                 445
```

<210> 11
<211> 462
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-Myc-FKBP(F36V)-EpoR(237-338;L241G,L242P)-IFNAR1(300-520)

<400> 11

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                   10                  15

His Ala Ala Arg Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Met
            20                  25                  30

Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
        35                  40                  45

Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
    50                  55                  60

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

Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
                85                  90                  95
```

```
Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
            100                 105                 110

Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
        115                 120                 125

Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val Ser
    130                 135                 140

Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser Leu
145                 150                 155                 160

Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu Ser
                165                 170                 175

His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser Pro
            180                 185                 190

Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe Gln
        195                 200                 205

Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys Thr
    210                 215                 220

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

Cys Arg Gly Val Arg Pro Thr Pro Arg Val Arg Ala Pro Ala Thr Gln
                245                 250                 255

Gln Thr Arg Trp Lys Lys Asp Leu Ala Glu Asp Glu Glu Glu Glu Asp
            260                 265                 270

Glu Glu Asp Thr Glu Asp Gly Val Ser Phe Gln Pro Tyr Ile Glu Pro
        275                 280                 285

Pro Ser Phe Leu Gly Gln Glu His Gln Ala Pro Gly His Ser Glu Ala
    290                 295                 300

Gly Gly Val Asp Ser Gly Arg Pro Arg Ala Pro Leu Val Pro Ser Glu
305                 310                 315                 320
```

```
Gly Ser Ser Ala Trp Asp Ser Ser Asp Arg Ser Trp Ala Ser Thr Val
                325                 330                 335


Asp Ser Ser Trp Asp Arg Ala Gly Ser Ser Gly Tyr Leu Ala Glu Lys
            340                 345                 350


Gly Pro Gly Gln Gly Pro Gly Gly Asp Gly His Gln Glu Ser Leu Pro
        355                 360                 365


Pro Pro Glu Phe Ser Lys Asp Ser Gly Phe Leu Glu Glu Leu Pro Glu
    370                 375                 380


Asp Asn Leu Ser Ser Trp Ala Thr Trp Gly Thr Leu Pro Pro Glu Pro
385                 390                 395                 400


Asn Leu Val Pro Gly Gly Pro Pro Val Ser Leu Gln Thr Leu Thr Phe
                405                 410                 415


Cys Trp Glu Ser Ser Pro Glu Glu Glu Glu Glu Ala Arg Glu Ser Glu
            420                 425                 430


Ile Glu Asp Ser Asp Ala Gly Ser Trp Gly Ala Glu Ser Thr Gln Arg
        435                 440                 445


Thr Glu Asp Arg Gly Arg Thr Leu Gly His Tyr Met Ala Arg
    450                 455                 460


<210>  12
<211>  444
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  CD8
       SS-Myc-FKBP(F36V)-muEpoR(236-337;L264G,L265P)-muIL2Rb(337-539)

<400>  12

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                   10                  15


His Ala Ala Arg Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Met
```

```
            20                  25                  30

Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
        35                  40                  45

Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
    50                  55                  60

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

Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
                85                  90                  95

Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
            100                 105                 110

Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
        115                 120                 125

Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Ala Ser
    130                 135                 140

Leu Leu Thr Ala Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser Leu
145                 150                 155                 160

Ile Leu Val Leu Ile Ser Leu Gly Pro Thr Val Leu Ala Leu Leu Ser
                165                 170                 175

His Arg Arg Thr Leu Gln Gln Lys Ile Trp Pro Gly Ile Pro Ser Pro
            180                 185                 190

Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe Gln
        195                 200                 205

Leu Trp Leu Leu Gln Arg Asp Gly Cys Leu Trp Trp Ser Pro Gly Ser
    210                 215                 220

Ser Phe Pro Glu Asp Pro Pro Ala His Leu Glu Val Leu Ser Glu Pro
225                 230                 235                 240
```

```
Arg Ala Val Gln Leu Leu Leu Leu Gln Lys Asp Ser Ala Pro Leu Pro
                245                 250                 255

Ser Pro Ser Gly His Ser Gln Ala Ser Cys Phe Thr Asn Gln Gly Tyr
            260                 265                 270

Phe Phe Phe His Leu Pro Asn Ala Leu Glu Ile Glu Ser Cys Gln Val
        275                 280                 285

Tyr Phe Thr Tyr Asp Pro Cys Val Glu Glu Glu Val Glu Glu Asp Gly
    290                 295                 300

Ser Arg Leu Pro Glu Gly Ser Pro His Pro Pro Leu Leu Pro Leu Ala
305                 310                 315                 320

Gly Glu Gln Asp Asp Tyr Cys Ala Phe Pro Pro Arg Asp Asp Leu Leu
                325                 330                 335

Leu Phe Ser Pro Ser Leu Ser Thr Pro Asn Thr Ala Tyr Gly Gly Ser
            340                 345                 350

Arg Ala Pro Glu Glu Arg Ser Pro Leu Ser Leu His Glu Gly Leu Pro
        355                 360                 365

Ser Leu Ala Ser Arg Asp Leu Met Gly Leu Gln Arg Pro Leu Glu Arg
    370                 375                 380

Met Pro Glu Gly Asp Gly Glu Gly Leu Ser Ala Asn Ser Ser Gly Glu
385                 390                 395                 400

Gln Ala Ser Val Pro Glu Gly Asn Leu His Gly Gln Asp Gln Asp Arg
                405                 410                 415

Gly Gln Gly Pro Ile Leu Thr Leu Asn Thr Asp Ala Tyr Leu Ser Leu
            420                 425                 430

Gln Glu Leu Gln Ala Gln Asp Ser Val His Leu Ile
        435                 440
```

<210> 13

<211> 385
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-Myc-FKBP(F36V)-muEpoR(236-337;L264G,L265P)-muIL7R(316-459)

<400> 13

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Met
20 25 30

Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
35 40 45

Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
50 55 60

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

Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
85 90 95

Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
100 105 110

Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
115 120 125

Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Ala Ser
130 135 140

Leu Leu Thr Ala Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser Leu
145 150 155 160

Ile Leu Val Leu Ile Ser Leu Gly Pro Thr Val Leu Ala Leu Leu Ser
165 170 175

His Arg Arg Thr Leu Gln Gln Lys Ile Trp Pro Gly Ile Pro Ser Pro

```
            180                 185                 190

Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe Gln
        195                 200                 205

Leu Trp Leu Leu Gln Arg Asp Gly Cys Leu Trp Trp Ser Pro Gly Ser
    210                 215                 220

Ser Phe Pro Glu Asp Pro Pro Ala His Leu Glu Val Leu Ser Glu Pro
225                 230                 235                 240

Arg Ala Arg Asp Glu Val Glu Ser Phe Leu Pro Asn Asp Leu Pro Ala
                245                 250                 255

Gln Pro Glu Glu Leu Glu Thr Gln Gly His Arg Ala Ala Val His Ser
            260                 265                 270

Ala Asn Arg Ser Pro Glu Thr Ser Val Ser Pro Pro Glu Thr Val Arg
        275                 280                 285

Arg Glu Ser Pro Leu Arg Cys Leu Ala Arg Asn Leu Ser Thr Cys Asn
    290                 295                 300

Ala Pro Pro Leu Leu Ser Ser Arg Ser Pro Asp Tyr Arg Asp Gly Asp
305                 310                 315                 320

Arg Asn Arg Pro Pro Val Tyr Gln Asp Leu Leu Pro Asn Ser Gly Asn
                325                 330                 335

Thr Asn Val Pro Val Pro Val Pro Gln Pro Leu Pro Phe Gln Ser Gly
            340                 345                 350

Ile Leu Ile Pro Val Ser Gln Arg Gln Pro Ile Ser Thr Ser Ser Val
        355                 360                 365

Leu Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln Asn
    370                 375                 380

Lys
385
```

<210> 14
<211> 436
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8
SS-Myc-FKBP(F36V)-EpoR(237-338;L241G,L242P)-IL7R(316-459)-IL12Rb2
(775-825)

<400> 14

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Met
20 25 30

Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
35 40 45

Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
50 55 60

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

Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
85 90 95

Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
100 105 110

Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
115 120 125

Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val Ser
130 135 140

Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser Leu
145 150 155 160

Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu Ser

```
                165                 170                 175

His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser Pro
            180                 185                 190

Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe Gln
        195                 200                 205

Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys Thr
    210                 215                 220

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

Cys Ala Arg Asp Glu Val Glu Gly Phe Leu Gln Asp Thr Phe Pro Gln
                245                 250                 255

Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly Asp Val Gln Ser
            260                 265                 270

Pro Asn Cys Pro Ser Glu Asp Val Val Ile Thr Pro Glu Ser Phe Gly
        275                 280                 285

Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn Val Ser Ala Cys Asp
    290                 295                 300

Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg Glu Ser Gly
305                 310                 315                 320

Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu Ser Leu Gly Thr
                325                 330                 335

Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln Ser Gly Ile Leu
            340                 345                 350

Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu Thr Ser Leu Gly
        355                 360                 365

Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln Asn
    370                 375                 380
```

Gln Ser Asp Pro Lys Pro Glu Asn Pro Ala Cys Pro Trp Thr Val Leu
385 390 395 400

Pro Ala Gly Asp Leu Pro Thr His Asp Gly Tyr Leu Pro Ser Asn Ile
405 410 415

Asp Asp Leu Pro Ser His Glu Ala Pro Leu Ala Asp Ser Leu Glu Glu
420 425 430

Leu Glu Pro Gln
435

<210> 15
<211> 426
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8
SS-Myc-FKBP(F36V)-GP130(609-700)-IL7R(316-459)-IL12Rb2(775-825)

<400> 15

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Met
20 25 30

Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
35 40 45

Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
50 55 60

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

Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
85 90 95

Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
100 105 110

```
Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
        115                 120                 125

Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Thr Thr Pro Lys Phe
    130                 135                 140

Ala Gln Gly Glu Ile Glu Ala Ile Val Val Pro Val Cys Leu Ala Phe
145                 150                 155                 160

Leu Leu Thr Thr Leu Leu Gly Val Leu Phe Cys Phe Asn Lys Arg Asp
                165                 170                 175

Leu Ile Lys Lys His Ile Trp Pro Asn Val Pro Asp Pro Ser Lys Ser
            180                 185                 190

His Ile Ala Gln Trp Ser Pro His Thr Pro Pro Arg His Asn Phe Asn
        195                 200                 205

Ser Lys Asp Gln Met Tyr Ser Asp Gly Asn Phe Thr Asp Val Ser Val
    210                 215                 220

Val Glu Ile Glu Ala Asn Asp Ala Arg Asp Glu Val Glu Gly Phe Leu
225                 230                 235                 240

Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu
                245                 250                 255

Gly Gly Asp Val Gln Ser Pro Asn Cys Pro Ser Glu Asp Val Val Ile
            260                 265                 270

Thr Pro Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly
        275                 280                 285

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

Asp Cys Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu
305                 310                 315                 320
```

```
Leu Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser
                325                 330                 335

Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro
            340                 345                 350

Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met
        355                 360                 365

Ser Ser Phe Tyr Gln Asn Gln Ser Asp Pro Lys Pro Glu Asn Pro Ala
    370                 375                 380

Cys Pro Trp Thr Val Leu Pro Ala Gly Asp Leu Pro Thr His Asp Gly
385                 390                 395                 400

Tyr Leu Pro Ser Asn Ile Asp Asp Leu Pro Ser His Glu Ala Pro Leu
                405                 410                 415

Ala Asp Ser Leu Glu Glu Leu Glu Pro Gln
            420                 425
```

<210> 16
<211> 433
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-Myc-FKBP(F36V)-PrlR(221-319)-IL7R(316-459)-IL12Rb2(775-825)

<400> 16

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                   10                  15

His Ala Ala Arg Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Met
            20                  25                  30

Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
        35                  40                  45

Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
    50                  55                  60
```

```
Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys Phe
65                  70                  75                  80

Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
                85                  90                  95

Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
            100                 105                 110

Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
        115                 120                 125

Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ala Thr Phe Ile Gln
    130                 135                 140

Ile Pro Ser Asp Phe Thr Met Asn Asp Thr Thr Val Trp Ile Ser Val
145                 150                 155                 160

Ala Val Leu Ser Ala Val Ile Cys Leu Ile Ile Val Trp Ala Val Ala
                165                 170                 175

Leu Lys Gly Tyr Ser Met Val Thr Cys Ile Phe Pro Pro Val Pro Gly
            180                 185                 190

Pro Lys Ile Lys Gly Phe Asp Ala His Leu Leu Glu Lys Gly Lys Ser
        195                 200                 205

Glu Glu Leu Leu Ser Ala Leu Gly Cys Gln Asp Phe Pro Pro Thr Ser
    210                 215                 220

Asp Tyr Glu Asp Leu Leu Val Glu Tyr Leu Glu Val Asp Asp Ala Arg
225                 230                 235                 240

Asp Glu Val Glu Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu
                245                 250                 255

Glu Ser Glu Lys Gln Arg Leu Gly Gly Asp Val Gln Ser Pro Asn Cys
            260                 265                 270

Pro Ser Glu Asp Val Val Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser
        275                 280                 285
```

```
Ser Leu Thr Cys Leu Ala Gly Asn Val Ser Ala Cys Asp Ala Pro Ile
    290                 295                 300

Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg Glu Ser Gly Lys Asn Gly
305                 310                 315                 320

Pro His Val Tyr Gln Asp Leu Leu Leu Ser Leu Gly Thr Thr Asn Ser
                325                 330                 335

Thr Leu Pro Pro Pro Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn
            340                 345                 350

Pro Val Ala Gln Gly Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln
        355                 360                 365

Glu Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln Asn Gln Ser Asp
    370                 375                 380

Pro Lys Pro Glu Asn Pro Ala Cys Pro Trp Thr Val Leu Pro Ala Gly
385                 390                 395                 400

Asp Leu Pro Thr His Asp Gly Tyr Leu Pro Ser Asn Ile Asp Asp Leu
                405                 410                 415

Pro Ser His Glu Ala Pro Leu Ala Asp Ser Leu Glu Glu Leu Glu Pro
            420                 425                 430

Gln
```

<210> 17
<211> 436
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-Myc-FKBP(F36V)-GHR(251-352)-IL7R(316-459)-IL12Rb2(775-825)

<400> 17

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                   10                  15
```

```
His Ala Ala Arg Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Met
            20                  25                  30

Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
        35                  40                  45

Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
    50                  55                  60

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

Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
                85                  90                  95

Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
            100                 105                 110

Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
        115                 120                 125

Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Leu Pro Gln Met Ser
    130                 135                 140

Gln Phe Thr Cys Glu Glu Asp Phe Tyr Phe Pro Trp Leu Leu Ile Ile
145                 150                 155                 160

Ile Phe Gly Ile Phe Gly Leu Thr Val Met Leu Phe Val Phe Leu Phe
                165                 170                 175

Ser Lys Gln Gln Arg Ile Lys Met Leu Ile Leu Pro Pro Val Pro Val
            180                 185                 190

Pro Lys Ile Lys Gly Ile Asp Pro Asp Leu Leu Lys Glu Gly Lys Leu
        195                 200                 205

Glu Glu Val Asn Thr Ile Leu Ala Ile His Asp Ser Tyr Lys Pro Glu
    210                 215                 220
```

```
Phe His Ser Asp Asp Ser Trp Val Glu Phe Ile Glu Leu Asp Ile Asp
225                 230                 235                 240


Glu Ala Arg Asp Glu Val Glu Gly Phe Leu Gln Asp Thr Phe Pro Gln
                245                 250                 255


Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly Asp Val Gln Ser
            260                 265                 270


Pro Asn Cys Pro Ser Glu Asp Val Val Ile Thr Pro Glu Ser Phe Gly
        275                 280                 285


Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn Val Ser Ala Cys Asp
    290                 295                 300


Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg Glu Ser Gly
305                 310                 315                 320


Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu Ser Leu Gly Thr
                325                 330                 335


Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln Ser Gly Ile Leu
            340                 345                 350


Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu Thr Ser Leu Gly
        355                 360                 365


Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln Asn
    370                 375                 380


Gln Ser Asp Pro Lys Pro Glu Asn Pro Ala Cys Pro Trp Thr Val Leu
385                 390                 395                 400


Pro Ala Gly Asp Leu Pro Thr His Asp Gly Tyr Leu Pro Ser Asn Ile
                405                 410                 415


Asp Asp Leu Pro Ser His Glu Ala Pro Leu Ala Asp Ser Leu Glu Glu
            420                 425                 430


Leu Glu Pro Gln
        435
```

<210> 18
<211> 431
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-Myc-FKBP(F36V)-GCSFR(614-710)-IL7R(316-459)-IL12Rb2(775-825)

<400> 18

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Met
20 25 30

Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
35 40 45

Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
50 55 60

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

Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
85 90 95

Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
100 105 110

Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
115 120 125

Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Leu Thr Leu Met Thr
130 135 140

Leu Thr Pro Glu Gly Ser Glu Leu His Ile Ile Leu Gly Leu Phe Gly
145 150 155 160

Leu Leu Leu Leu Leu Thr Cys Leu Cys Gly Thr Ala Trp Leu Cys Cys
165 170 175

```
Ser Pro Asn Arg Lys Asn Pro Leu Trp Pro Ser Val Pro Asp Pro Ala
            180                 185                 190

His Ser Ser Leu Gly Ser Trp Val Pro Thr Ile Met Glu Glu Asp Ala
        195                 200                 205

Phe Gln Leu Pro Gly Leu Gly Thr Pro Pro Ile Thr Lys Leu Thr Val
    210                 215                 220

Leu Glu Glu Asp Glu Lys Lys Pro Val Pro Trp Glu Ala Arg Asp Glu
225                 230                 235                 240

Val Glu Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu Ser
                245                 250                 255

Glu Lys Gln Arg Leu Gly Gly Asp Val Gln Ser Pro Asn Cys Pro Ser
            260                 265                 270

Glu Asp Val Val Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser Ser Leu
        275                 280                 285

Thr Cys Leu Ala Gly Asn Val Ser Ala Cys Asp Ala Pro Ile Leu Ser
    290                 295                 300

Ser Ser Arg Ser Leu Asp Cys Arg Glu Ser Gly Lys Asn Gly Pro His
305                 310                 315                 320

Val Tyr Gln Asp Leu Leu Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu
                325                 330                 335

Pro Pro Pro Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro Val
            340                 345                 350

Ala Gln Gly Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu
        355                 360                 365

Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln Asn Gln Ser Asp Pro Lys
    370                 375                 380
```

```
Pro Glu Asn Pro Ala Cys Pro Trp Thr Val Leu Pro Ala Gly Asp Leu
385                 390                 395                 400


Pro Thr His Asp Gly Tyr Leu Pro Ser Asn Ile Asp Asp Leu Pro Ser
                405                 410                 415


His Glu Ala Pro Leu Ala Asp Ser Leu Glu Glu Leu Glu Pro Gln
            420                 425                 430


<210>  19
<211>  439
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  CD8 SS-Myc-FKBP(F36V)-TPOR/MPLR(478-582)-IL7R(316-459)-IL12Rb2(775-825)

<400>  19

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                   10                  15


His Ala Ala Arg Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Met
            20                  25                  30


Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
        35                  40                  45


Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
    50                  55                  60


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


Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
                85                  90                  95


Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
            100                 105                 110


Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
        115                 120                 125
```

```
Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr Arg
    130                 135                 140

Val Glu Thr Ala Thr Glu Thr Ala Trp Ile Ser Leu Val Thr Ala Leu
145                 150                 155                 160

His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu Arg
                165                 170                 175

Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp Pro
            180                 185                 190

Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp Thr
        195                 200                 205

Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys Glu Glu
    210                 215                 220

Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg Thr
225                 230                 235                 240

Pro Leu Pro Leu Ala Arg Asp Glu Val Glu Gly Phe Leu Gln Asp Thr
                245                 250                 255

Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly Asp
            260                 265                 270

Val Gln Ser Pro Asn Cys Pro Ser Glu Asp Val Val Ile Thr Pro Glu
        275                 280                 285

Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn Val Ser
    290                 295                 300

Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg
305                 310                 315                 320

Glu Ser Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu Ser
                325                 330                 335

Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln Ser
            340                 345                 350
```

Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu Thr
355 360 365

Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser Phe
370 375 380

Tyr Gln Asn Gln Ser Asp Pro Lys Pro Glu Asn Pro Ala Cys Pro Trp
385 390 395 400

Thr Val Leu Pro Ala Gly Asp Leu Pro Thr His Asp Gly Tyr Leu Pro
405 410 415

Ser Asn Ile Asp Asp Leu Pro Ser His Glu Ala Pro Leu Ala Asp Ser
420 425 430

Leu Glu Glu Leu Glu Pro Gln
435

<210> 20
<211> 282
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-Myc-FKBP(F36V)- EpoR(237-338;L241G,L242P)-IL7R(376-416)

<400> 20

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Met
20 25 30

Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
35 40 45

Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
50 55 60

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

```
Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
                85                  90                  95

Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
            100                 105                 110

Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
        115                 120                 125

Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val Ser
    130                 135                 140

Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser Leu
145                 150                 155                 160

Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu Ser
                165                 170                 175

His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser Pro
            180                 185                 190

Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe Gln
        195                 200                 205

Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys Thr
    210                 215                 220

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

Cys Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys
                245                 250                 255

Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu
            260                 265                 270

Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro
        275                 280
```

<210> 21
<211> 277
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-Myc-FKBP(F36V)- EpoR(237-338;L241G,L242P)-IL7R(424-459)

<400> 21

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Met
20 25 30

Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
35 40 45

Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
50 55 60

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

Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
85 90 95

Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
100 105 110

Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
115 120 125

Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val Ser
130 135 140

Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser Leu
145 150 155 160

Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu Ser
165 170 175

```
His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser Pro
            180                 185                 190


Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe Gln
        195                 200                 205


Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys Thr
    210                 215                 220


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


Cys Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu
                245                 250                 255


Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser
            260                 265                 270


Phe Tyr Gln Asn Gln
        275


<210>  22
<211>  309
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  CD8 SS-Myc-FKBP(F36V)- EpoR(237-338;L241G,L242P)-IL7R(376-416,424-459)

<400>  22

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                   10                  15


His Ala Ala Arg Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Met
            20                  25                  30


Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
        35                  40                  45


Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
    50                  55                  60
```

```
Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys Phe
65                  70                  75                  80

Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
                85                  90                  95

Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
            100                 105                 110

Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
        115                 120                 125

Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val Ser
    130                 135                 140

Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser Leu
145                 150                 155                 160

Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu Ser
                165                 170                 175

His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser Pro
            180                 185                 190

Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe Gln
        195                 200                 205

Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys Thr
    210                 215                 220

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

Cys Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys
                245                 250                 255

Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu
            260                 265                 270

Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Gln Gly Gln Pro Ile Leu
        275                 280                 285
```

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

Phe Tyr Gln Asn Gln
305

<210> 23
<211> 277
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-Myc-FKBP(F36V)- EpoR(237-338;L241G,L242P)-IL7R(424-459;Y456F)

<400> 23

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Met
20 25 30

Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
35 40 45

Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
50 55 60

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

Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
85 90 95

Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
100 105 110

Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
115 120 125

Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val Ser
130 135 140

```
Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser Leu
145                 150                 155                 160


Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu Ser
                165                 170                 175


His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser Pro
            180                 185                 190


Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe Gln
        195                 200                 205


Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys Thr
    210                 215                 220


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


Cys Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu
                245                 250                 255


Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser
            260                 265                 270


Phe Phe Gln Asn Gln
        275
```

<210> 24
<211> 309
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-Myc-FKBP(F36V)-
EpoR(237-338;L241G,L242P)-IL7R(376-416,424-459;Y456F)

<400> 24

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                   10                  15


His Ala Ala Arg Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Met
```

```
            20                  25                  30

Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
        35                  40                  45

Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
    50                  55                  60

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

Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
                85                  90                  95

Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
            100                 105                 110

Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
        115                 120                 125

Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val Ser
    130                 135                 140

Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser Leu
145                 150                 155                 160

Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu Ser
                165                 170                 175

His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser Pro
            180                 185                 190

Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe Gln
        195                 200                 205

Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys Thr
    210                 215                 220

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

```
Cys Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys
                245                 250                 255


Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu
            260                 265                 270


Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Gln Gly Gln Pro Ile Leu
        275                 280                 285


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


Phe Phe Gln Asn Gln
305
```

<210> 25
<211> 282
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-Myc-FKBP(F36V)- EpoR(237-338;L241G,L242P)-IL2Rb(393-433)

<400> 25

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                   10                  15


His Ala Ala Arg Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Met
            20                  25                  30


Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
        35                  40                  45


Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
    50                  55                  60


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


Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
                85                  90                  95
```

```
Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
            100                 105                 110

Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
        115                 120                 125

Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val Ser
    130                 135                 140

Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser Leu
145                 150                 155                 160

Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu Ser
                165                 170                 175

His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser Pro
            180                 185                 190

Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe Gln
        195                 200                 205

Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys Thr
    210                 215                 220

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

Cys Asp Glu Gly Val Ala Gly Ala Pro Thr Gly Ser Ser Pro Gln Pro
                245                 250                 255

Leu Gln Pro Leu Ser Gly Glu Asp Asp Ala Tyr Cys Thr Phe Pro Ser
            260                 265                 270

Arg Asp Asp Leu Leu Leu Phe Ser Pro Ser
        275                 280
```

<210> 26
<211> 275
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-Myc-FKBP(F36V)- EpoR(237-338;L241G,L242P)-IL2Rb(518-551)

<400> 26

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                  10                  15


His Ala Ala Arg Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Met
            20                  25                  30


Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
        35                  40                  45


Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
    50                  55                  60


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


Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
                85                  90                  95


Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
            100                 105                 110


Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
        115                 120                 125


Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val Ser
    130                 135                 140


Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser Leu
145                 150                 155                 160


Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu Ser
                165                 170                 175


His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser Pro
            180                 185                 190


Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe Gln
```

195 200 205

Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys Thr
210 215 220

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

Cys Gly Gln Gly Glu Phe Arg Ala Leu Asn Ala Arg Leu Pro Leu Asn
245 250 255

Thr Asp Ala Tyr Leu Ser Leu Gln Glu Leu Gln Gly Gln Asp Pro Thr
260 265 270

His Leu Val
275

<210> 27
<211> 323
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-Myc-FKBP(F36V)- EpoR(237-338;L241G,L242P)-IL2Rb(339-379,393-433)

<400> 27

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Met
20 25 30

Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
35 40 45

Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
50 55 60

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

Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala

```
                85                  90                  95

Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
            100                 105                 110

Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
        115                 120                 125

Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val Ser
    130                 135                 140

Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser Leu
145                 150                 155                 160

Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu Ser
                165                 170                 175

His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser Pro
            180                 185                 190

Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe Gln
        195                 200                 205

Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys Thr
    210                 215                 220

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

Cys Gln Gln Asp Lys Val Pro Glu Pro Ala Ser Leu Ser Ser Asn His
                245                 250                 255

Ser Leu Thr Ser Cys Phe Thr Asn Gln Gly Tyr Phe Phe Phe His Leu
            260                 265                 270

Pro Asp Ala Leu Glu Ile Glu Ala Cys Gln Asp Glu Gly Val Ala Gly
        275                 280                 285

Ala Pro Thr Gly Ser Ser Pro Gln Pro Leu Gln Pro Leu Ser Gly Glu
    290                 295                 300
```

Asp Asp Ala Tyr Cys Thr Phe Pro Ser Arg Asp Asp Leu Leu Leu Phe
305 310 315 320

Ser Pro Ser

<210> 28
<211> 316
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-Myc-FKBP(F36V)- EpoR(237-338;L241G,L242P)-IL2Rb(339-379,518-551)

<400> 28

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Met
20 25 30

Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
35 40 45

Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
50 55 60

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

Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
85 90 95

Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
100 105 110

Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
115 120 125

Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val Ser
130 135 140

```
Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser Leu
145                 150                 155                 160

Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu Ser
                165                 170                 175

His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser Pro
            180                 185                 190

Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe Gln
        195                 200                 205

Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys Thr
    210                 215                 220

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

Cys Gln Gln Asp Lys Val Pro Glu Pro Ala Ser Leu Ser Ser Asn His
                245                 250                 255

Ser Leu Thr Ser Cys Phe Thr Asn Gln Gly Tyr Phe Phe Phe His Leu
            260                 265                 270

Pro Asp Ala Leu Glu Ile Glu Ala Cys Gln Gly Gln Gly Glu Phe Arg
        275                 280                 285

Ala Leu Asn Ala Arg Leu Pro Leu Asn Thr Asp Ala Tyr Leu Ser Leu
    290                 295                 300

Gln Glu Leu Gln Gly Gln Asp Pro Thr His Leu Val
305                 310                 315
```

<210> 29
<211> 316
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-Myc-FKBP(F36V)- EpoR(237-338;L241G,L242P)-IL2Rb(393-433,518-551)

<400> 29

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                  10                  15

His Ala Ala Arg Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Met
            20                  25                  30

Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
        35                  40                  45

Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
    50                  55                  60

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

Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
                85                  90                  95

Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
            100                 105                 110

Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
        115                 120                 125

Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val Ser
    130                 135                 140

Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser Leu
145                 150                 155                 160

Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu Ser
                165                 170                 175

His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser Pro
            180                 185                 190

Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe Gln
        195                 200                 205

Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys Thr
```

210 215 220

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

Cys Asp Glu Gly Val Ala Gly Ala Pro Thr Gly Ser Ser Pro Gln Pro
245 250 255

Leu Gln Pro Leu Ser Gly Glu Asp Asp Ala Tyr Cys Thr Phe Pro Ser
260 265 270

Arg Asp Asp Leu Leu Leu Phe Ser Pro Ser Gly Gln Gly Glu Phe Arg
275 280 285

Ala Leu Asn Ala Arg Leu Pro Leu Asn Thr Asp Ala Tyr Leu Ser Leu
290 295 300

Gln Glu Leu Gln Gly Gln Asp Pro Thr His Leu Val
305 310 315

<210> 30
<211> 357
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-Myc-FKBP(F36V)-
EpoR(237-338;L241G,L242P)-IL2Rb(339-379,393-433,518-551)

<400> 30

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Met
20 25 30

Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
35 40 45

Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
50 55 60

```
Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys Phe
65                  70                  75                  80

Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
                85                  90                  95

Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
            100                 105                 110

Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
        115                 120                 125

Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val Ser
    130                 135                 140

Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser Leu
145                 150                 155                 160

Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu Ser
                165                 170                 175

His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser Pro
            180                 185                 190

Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe Gln
        195                 200                 205

Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys Thr
    210                 215                 220

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

Cys Gln Gln Asp Lys Val Pro Glu Pro Ala Ser Leu Ser Ser Asn His
                245                 250                 255

Ser Leu Thr Ser Cys Phe Thr Asn Gln Gly Tyr Phe Phe Phe His Leu
            260                 265                 270

Pro Asp Ala Leu Glu Ile Glu Ala Cys Gln Asp Glu Gly Val Ala Gly
        275                 280                 285
```

```
Ala Pro Thr Gly Ser Ser Pro Gln Pro Leu Gln Pro Leu Ser Gly Glu
    290                 295                 300

Asp Asp Ala Tyr Cys Thr Phe Pro Ser Arg Asp Asp Leu Leu Leu Phe
305                 310                 315                 320

Ser Pro Ser Gly Gln Gly Glu Phe Arg Ala Leu Asn Ala Arg Leu Pro
                325                 330                 335

Leu Asn Thr Asp Ala Tyr Leu Ser Leu Gln Glu Leu Gln Gly Gln Asp
            340                 345                 350

Pro Thr His Leu Val
        355
```

<210> 31
<211> 472
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-Myc-FKBP(F36V)- EpoR(237-338;L241G,L242P)-EGFR(955-1186)

<400> 31

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                   10                  15

His Ala Ala Arg Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Met
            20                  25                  30

Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
        35                  40                  45

Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
    50                  55                  60

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

Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
                85                  90                  95
```

```
Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
            100                 105                 110

Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
        115                 120                 125

Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val Ser
    130                 135                 140

Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser Leu
145                 150                 155                 160

Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu Ser
                165                 170                 175

His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser Pro
            180                 185                 190

Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe Gln
        195                 200                 205

Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys Thr
    210                 215                 220

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

Cys Val Ile Gln Gly Asp Glu Arg Met His Leu Pro Ser Pro Thr Asp
                245                 250                 255

Ser Asn Phe Tyr Arg Ala Leu Met Asp Glu Glu Asp Met Asp Asp Val
            260                 265                 270

Val Asp Ala Asp Glu Tyr Leu Ile Pro Gln Gln Gly Phe Phe Ser Ser
        275                 280                 285

Pro Ser Thr Ser Arg Thr Pro Leu Leu Ser Ser Leu Ser Ala Thr Ser
    290                 295                 300
```

```
Asn Asn Ser Thr Val Ala Cys Ile Asp Arg Asn Gly Leu Gln Ser Cys
305                 310                 315                 320

Pro Ile Lys Glu Asp Ser Phe Leu Gln Arg Tyr Ser Ser Asp Pro Thr
                325                 330                 335

Gly Ala Leu Thr Glu Asp Ser Ile Asp Asp Thr Phe Leu Pro Val Pro
            340                 345                 350

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

Asn Pro Val Tyr His Asn Gln Pro Leu Asn Pro Ala Pro Ser Arg Asp
    370                 375                 380

Pro His Tyr Gln Asp Pro His Ser Thr Ala Val Gly Asn Pro Glu Tyr
385                 390                 395                 400

Leu Asn Thr Val Gln Pro Thr Cys Val Asn Ser Thr Phe Asp Ser Pro
                405                 410                 415

Ala His Trp Ala Gln Lys Gly Ser His Gln Ile Ser Leu Asp Asn Pro
            420                 425                 430

Asp Tyr Gln Gln Asp Phe Phe Pro Lys Glu Ala Lys Pro Asn Gly Ile
        435                 440                 445

Phe Lys Gly Ser Thr Ala Glu Asn Ala Glu Tyr Leu Arg Val Ala Pro
    450                 455                 460

Gln Ser Ser Glu Phe Ile Gly Ala
465                 470
```

<210> 32
<211> 459
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-Myc-FKBP(F36V)-EpoR(237-338;L241G,L242P)-EGFR(955-1044,1058-1186;Y974F)

<400> 32

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                  10                  15

His Ala Ala Arg Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Met
            20                  25                  30

Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
        35                  40                  45

Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
    50                  55                  60

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

Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
                85                  90                  95

Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
            100                 105                 110

Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
        115                 120                 125

Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val Ser
    130                 135                 140

Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser Leu
145                 150                 155                 160

Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu Ser
                165                 170                 175

His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser Pro
            180                 185                 190

Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe Gln
        195                 200                 205

Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys Thr
```

```
    210                 215                 220

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

Cys Val Ile Gln Gly Asp Glu Arg Met His Leu Pro Ser Pro Thr Asp
                245                 250                 255

Ser Asn Phe Phe Arg Ala Leu Met Asp Glu Glu Asp Met Asp Asp Val
            260                 265                 270

Val Asp Ala Asp Glu Tyr Leu Ile Pro Gln Gln Gly Phe Phe Ser Ser
        275                 280                 285

Pro Ser Thr Ser Arg Thr Pro Leu Leu Ser Ser Leu Ser Ala Thr Ser
    290                 295                 300

Asn Asn Ser Thr Val Ala Cys Ile Asp Arg Asn Gly Leu Gln Ser Cys
305                 310                 315                 320

Pro Ile Lys Glu Asp Ser Phe Leu Gln Arg Ile Asp Asp Thr Phe Leu
                325                 330                 335

Pro Val Pro Glu Tyr Ile Asn Gln Ser Val Pro Lys Arg Pro Ala Gly
            340                 345                 350

Ser Val Gln Asn Pro Val Tyr His Asn Gln Pro Leu Asn Pro Ala Pro
        355                 360                 365

Ser Arg Asp Pro His Tyr Gln Asp Pro His Ser Thr Ala Val Gly Asn
    370                 375                 380

Pro Glu Tyr Leu Asn Thr Val Gln Pro Thr Cys Val Asn Ser Thr Phe
385                 390                 395                 400

Asp Ser Pro Ala His Trp Ala Gln Lys Gly Ser His Gln Ile Ser Leu
                405                 410                 415

Asp Asn Pro Asp Tyr Gln Gln Asp Phe Phe Pro Lys Glu Ala Lys Pro
            420                 425                 430
```

Asn Gly Ile Phe Lys Gly Ser Thr Ala Glu Asn Ala Glu Tyr Leu Arg
        435   440   445

Val Ala Pro Gln Ser Ser Glu Phe Ile Gly Ala
    450   455

<210> 33
<211> 295
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-Myc-FKBP(F36V)- EpoR(237-338;L241G,L242P)-EGFR(955-1009;Y974F)

<400> 33

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1   5   10   15

His Ala Ala Arg Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Met
            20   25   30

Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
        35   40   45

Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
    50   55   60

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

Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
                85   90   95

Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
            100   105   110

Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
        115   120   125

Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val Ser
    130   135   140

```
Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser Leu
145                 150                 155                 160


Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu Ser
                165                 170                 175


His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser Pro
            180                 185                 190


Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe Gln
        195                 200                 205


Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys Thr
    210                 215                 220


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


Cys Val Ile Gln Gly Asp Glu Arg Met His Leu Pro Ser Pro Thr Asp
                245                 250                 255


Ser Asn Phe Phe Arg Ala Leu Met Asp Glu Glu Asp Met Asp Asp Val
            260                 265                 270


Val Asp Ala Asp Glu Tyr Leu Ile Pro Gln Gln Gly Phe Phe Ser Ser
        275                 280                 285


Pro Ser Thr Ser Arg Thr Pro
    290                 295
```

<210> 34
<211> 295
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-Myc-FKBP(F36V)- EpoR(237-338;L241G,L242P)-EGFR(1019-1085)

<400> 34

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                   10                  15
```

```
His Ala Ala Arg Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Met
            20                  25                  30

Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
        35                  40                  45

Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
    50                  55                  60

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

Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
                85                  90                  95

Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
            100                 105                 110

Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
        115                 120                 125

Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val Ser
    130                 135                 140

Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser Leu
145                 150                 155                 160

Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu Ser
                165                 170                 175

His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser Pro
            180                 185                 190

Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe Gln
        195                 200                 205

Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys Thr
    210                 215                 220

Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu Val Leu Ser Glu Arg
```

225 230 235 240

Cys Asn Asn Ser Thr Val Ala Cys Ile Asp Arg Asn Gly Leu Gln Ser
245 250 255

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

Leu Pro Val Pro Glu Tyr Ile Asn Gln Ser Val Pro Lys Arg Pro Ala
275 280 285

Gly Ser Val Gln Asn Pro Val
290 295

<210> 35
<211> 295
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-Myc-FKBP(F36V)-
EpoR(237-338;L241G,L242P)-EGFR(1037-1044,1058-1103;Y1068/1101F)

<400> 35

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Met
20 25 30

Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
35 40 45

Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
50 55 60

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

Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
85 90 95

```
Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
            100                 105                 110

Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
        115                 120                 125

Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val Ser
    130                 135                 140

Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser Leu
145                 150                 155                 160

Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu Ser
                165                 170                 175

His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser Pro
            180                 185                 190

Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe Gln
        195                 200                 205

Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys Thr
    210                 215                 220

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

Cys Lys Glu Asp Ser Phe Leu Gln Arg Ile Asp Asp Thr Phe Leu Pro
                245                 250                 255

Val Pro Glu Phe Ile Asn Gln Ser Val Pro Lys Arg Pro Ala Gly Ser
            260                 265                 270

Val Gln Asn Pro Val Tyr His Asn Gln Pro Leu Asn Pro Ala Pro Ser
        275                 280                 285

Arg Asp Pro His Phe Gln Asp
    290                 295
```

<210> 36
<211> 295

<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-Myc-FKBP(F36V)-
EpoR(237-338;L241G,L242P)-EGFR(1066-1118;Y1068/1086F)

<400> 36

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Met
20 25 30

Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
35 40 45

Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
50 55 60

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

Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
85 90 95

Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
100 105 110

Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
115 120 125

Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val Ser
130 135 140

Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser Leu
145 150 155 160

Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu Ser
165 170 175

His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser Pro

```
            180                 185                 190

Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe Gln
        195                 200                 205

Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys Thr
    210                 215                 220

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

Cys Val Pro Glu Phe Ile Asn Gln Ser Val Pro Lys Arg Pro Ala Gly
                245                 250                 255

Ser Val Gln Asn Pro Val Phe His Asn Gln Pro Leu Asn Pro Ala Pro
            260                 265                 270

Ser Arg Asp Pro His Tyr Gln Asp Pro His Ser Thr Ala Val Gly Asn
        275                 280                 285

Pro Glu Tyr Leu Asn Thr Val
    290                 295


<210>  37
<211>  295
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  CD8 SS-Myc-FKBP(F36V)- EpoR(237-338;L241G,L242P)-EGFR(1122-1165)

<400>  37

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                   10                  15

His Ala Ala Arg Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Met
            20                  25                  30

Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
        35                  40                  45

Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
```

```
    50                  55                  60

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

Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
                85                  90                  95

Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
            100                 105                 110

Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
        115                 120                 125

Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val Ser
    130                 135                 140

Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser Leu
145                 150                 155                 160

Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu Ser
                165                 170                 175

His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser Pro
            180                 185                 190

Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe Gln
        195                 200                 205

Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys Thr
    210                 215                 220

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

Cys Pro Glu Tyr Leu Asn Thr Val Gln Pro Thr Cys Val Asn Ser Thr
                245                 250                 255

Phe Asp Ser Pro Ala His Trp Ala Gln Lys Gly Ser His Gln Ile Ser
            260                 265                 270
```

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

Pro Asn Gly Ile Phe Lys Gly
    290   295

<210> 38
<211> 295
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-Myc-FKBP(F36V)- EpoR(237-338;L241G,L242P)-EGFR(1133-1186;Y1148F)

<400> 38

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1   5   10   15

His Ala Ala Arg Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Met
            20   25   30

Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
        35   40   45

Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
    50   55   60

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

Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
                85   90   95

Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
            100   105   110

Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
        115   120   125

Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val Ser
    130   135   140

```
Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser Leu
145                 150                 155                 160


Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu Ser
                165                 170                 175


His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser Pro
            180                 185                 190


Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe Gln
        195                 200                 205


Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys Thr
    210                 215                 220


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


Cys Trp Ala Gln Lys Gly Ser His Gln Ile Ser Leu Asp Asn Pro Asp
                245                 250                 255


Phe Gln Gln Asp Phe Phe Pro Lys Glu Ala Lys Pro Asn Gly Ile Phe
            260                 265                 270


Lys Gly Ser Thr Ala Glu Asn Ala Glu Tyr Leu Arg Val Ala Pro Gln
        275                 280                 285


Ser Ser Glu Phe Ile Gly Ala
    290                 295


<210>  39
<211>  397
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  CD8 SS-Myc-FKBP(F36V)- EpoR(237-338;L241G,L242P)-BLNK(53-208)

<400>  39

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                   10                  15
```

```
His Ala Ala Arg Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Met
            20                  25                  30

Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
        35                  40                  45

Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
    50                  55                  60

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

Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
                85                  90                  95

Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
            100                 105                 110

Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
        115                 120                 125

Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val Ser
    130                 135                 140

Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser Leu
145                 150                 155                 160

Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu Ser
                165                 170                 175

His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser Pro
            180                 185                 190

Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe Gln
        195                 200                 205

Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys Thr
    210                 215                 220

Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu Val Leu Ser Glu Arg
```

225 230 235 240

Cys Ala Ser Glu Ser Pro Ala Asp Glu Glu Glu Gln Trp Ser Asp Asp
245 250 255

Phe Asp Ser Asp Tyr Glu Asn Pro Asp Glu His Ser Asp Ser Glu Met
260 265 270

Tyr Val Met Pro Ala Glu Glu Asn Ala Asp Asp Ser Tyr Glu Pro Pro
275 280 285

Pro Val Glu Gln Glu Thr Arg Pro Val His Pro Ala Leu Pro Phe Ala
290 295 300

Arg Gly Glu Tyr Ile Asp Asn Arg Ser Ser Gln Arg His Ser Pro Pro
305 310 315 320

Phe Ser Lys Thr Leu Pro Ser Lys Pro Ser Trp Pro Ser Glu Lys Ala
325 330 335

Arg Leu Thr Ser Thr Leu Pro Ala Leu Thr Ala Leu Gln Lys Pro Gln
340 345 350

Val Pro Pro Lys Pro Lys Gly Leu Leu Glu Asp Glu Ala Asp Tyr Val
355 360 365

Val Pro Val Glu Asp Asn Asp Glu Asn Tyr Ile His Pro Thr Glu Ser
370 375 380

Ser Ser Pro Pro Pro Glu Lys Ala Pro Met Val Asn Arg
385 390 395

<210> 40
<211> 397
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-Myc-FKBP(F36V)- EpoR(237-338;L241G,L242P)-BLNK(53-208;Y72F)

<400> 40

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu

```
1               5                   10                  15

His Ala Ala Arg Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Met
            20                  25                  30

Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
        35                  40                  45

Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
    50                  55                  60

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

Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
                85                  90                  95

Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
            100                 105                 110

Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
        115                 120                 125

Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val Ser
    130                 135                 140

Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser Leu
145                 150                 155                 160

Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu Ser
                165                 170                 175

His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser Pro
            180                 185                 190

Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe Gln
        195                 200                 205

Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys Thr
    210                 215                 220
```

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


Cys Ala Ser Glu Ser Pro Ala Asp Glu Glu Glu Gln Trp Ser Asp Asp
                245                 250                 255


Phe Asp Ser Asp Phe Glu Asn Pro Asp Glu His Ser Asp Ser Glu Met
            260                 265                 270


Tyr Val Met Pro Ala Glu Glu Asn Ala Asp Asp Ser Tyr Glu Pro Pro
        275                 280                 285


Pro Val Glu Gln Glu Thr Arg Pro Val His Pro Ala Leu Pro Phe Ala
    290                 295                 300


Arg Gly Glu Tyr Ile Asp Asn Arg Ser Ser Gln Arg His Ser Pro Pro
305                 310                 315                 320


Phe Ser Lys Thr Leu Pro Ser Lys Pro Ser Trp Pro Ser Glu Lys Ala
                325                 330                 335


Arg Leu Thr Ser Thr Leu Pro Ala Leu Thr Ala Leu Gln Lys Pro Gln
            340                 345                 350


Val Pro Pro Lys Pro Lys Gly Leu Leu Glu Asp Glu Ala Asp Tyr Val
        355                 360                 365


Val Pro Val Glu Asp Asn Asp Glu Asn Tyr Ile His Pro Thr Glu Ser
    370                 375                 380


Ser Ser Pro Pro Pro Glu Lys Ala Pro Met Val Asn Arg
385                 390                 395


<210>  41
<211>  397
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  CD8 SS-Myc-FKBP(F36V)- EpoR(237-338;L241G,L242P)-BLNK(53-208;Y72F,Y96F)

<400>  41
```

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                  10                  15

His Ala Ala Arg Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Met
            20                  25                  30

Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
        35                  40                  45

Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
    50                  55                  60

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

Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
                85                  90                  95

Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
            100                 105                 110

Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
        115                 120                 125

Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val Ser
    130                 135                 140

Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser Leu
145                 150                 155                 160

Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu Ser
                165                 170                 175

His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser Pro
            180                 185                 190

Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe Gln
        195                 200                 205

Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys Thr
```

210 215 220

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

Cys Ala Ser Glu Ser Pro Ala Asp Glu Glu Glu Gln Trp Ser Asp Asp
245 250 255

Phe Asp Ser Asp Phe Glu Asn Pro Asp Glu His Ser Asp Ser Glu Met
260 265 270

Tyr Val Met Pro Ala Glu Glu Asn Ala Asp Asp Ser Phe Glu Pro Pro
275 280 285

Pro Val Glu Gln Glu Thr Arg Pro Val His Pro Ala Leu Pro Phe Ala
290 295 300

Arg Gly Glu Tyr Ile Asp Asn Arg Ser Ser Gln Arg His Ser Pro Pro
305 310 315 320

Phe Ser Lys Thr Leu Pro Ser Lys Pro Ser Trp Pro Ser Glu Lys Ala
325 330 335

Arg Leu Thr Ser Thr Leu Pro Ala Leu Thr Ala Leu Gln Lys Pro Gln
340 345 350

Val Pro Pro Lys Pro Lys Gly Leu Leu Glu Asp Glu Ala Asp Tyr Val
355 360 365

Val Pro Val Glu Asp Asn Asp Glu Asn Tyr Ile His Pro Thr Glu Ser
370 375 380

Ser Ser Pro Pro Pro Glu Lys Ala Pro Met Val Asn Arg
385 390 395

<210> 42
<211> 378
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-FKBP(F36V)- TPOR/MPLR(478-582)-IL7R(316-459)

<400> 42

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                  10                  15

His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
            20                  25                  30

Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
        35                  40                  45

Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
    50                  55                  60

Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65                  70                  75                  80

Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
                85                  90                  95

Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
            100                 105                 110

Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
        115                 120                 125

Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile
    130                 135                 140

Ser Leu Val Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu
145                 150                 155                 160

Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu
                165                 170                 175

Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly
            180                 185                 190

Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val
        195                 200                 205
```

```
Ser Asp Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro
    210                 215                 220

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

Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys
                245                 250                 255

Gln Arg Leu Gly Gly Asp Val Gln Ser Pro Asn Cys Pro Ser Glu Asp
            260                 265                 270

Val Val Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys
        275                 280                 285

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

Arg Ser Leu Asp Cys Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr
305                 310                 315                 320

Gln Asp Leu Leu Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro
                325                 330                 335

Pro Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln
            340                 345                 350

Gly Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr
        355                 360                 365

Val Thr Met Ser Ser Phe Tyr Gln Asn Gln
    370                 375
```

<210> 43
<211> 453
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-FKBP(F36V)- TPOR/MPLR(478-582)-IL2Rb(333-551)

<400> 43

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                  10                  15

His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
            20                  25                  30

Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
        35                  40                  45

Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
    50                  55                  60

Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65                  70                  75                  80

Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
                85                  90                  95

Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
            100                 105                 110

Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
        115                 120                 125

Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile
    130                 135                 140

Ser Leu Val Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu
145                 150                 155                 160

Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu
                165                 170                 175

Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly
            180                 185                 190

Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val
        195                 200                 205

Ser Asp Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro
```

```
    210                 215                 220

Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu Val Thr Gln Leu Leu Leu
225                 230                 235                 240

Gln Gln Asp Lys Val Pro Glu Pro Ala Ser Leu Ser Ser Asn His Ser
                245                 250                 255

Leu Thr Ser Cys Phe Thr Asn Gln Gly Tyr Phe Phe Phe His Leu Pro
            260                 265                 270

Asp Ala Leu Glu Ile Glu Ala Cys Gln Val Tyr Phe Thr Tyr Asp Pro
        275                 280                 285

Tyr Ser Glu Glu Asp Pro Asp Glu Gly Val Ala Gly Ala Pro Thr Gly
    290                 295                 300

Ser Ser Pro Gln Pro Leu Gln Pro Leu Ser Gly Glu Asp Asp Ala Tyr
305                 310                 315                 320

Cys Thr Phe Pro Ser Arg Asp Asp Leu Leu Leu Phe Ser Pro Ser Leu
                325                 330                 335

Leu Gly Gly Pro Ser Pro Pro Ser Thr Ala Pro Gly Gly Ser Gly Ala
            340                 345                 350

Gly Glu Glu Arg Met Pro Pro Ser Leu Gln Glu Arg Val Pro Arg Asp
        355                 360                 365

Trp Asp Pro Gln Pro Leu Gly Pro Pro Thr Pro Gly Val Pro Asp Leu
    370                 375                 380

Val Asp Phe Gln Pro Pro Pro Glu Leu Val Leu Arg Glu Ala Gly Glu
385                 390                 395                 400

Glu Val Pro Asp Ala Gly Pro Arg Glu Gly Val Ser Phe Pro Trp Ser
                405                 410                 415

Arg Pro Pro Gly Gln Gly Glu Phe Arg Ala Leu Asn Ala Arg Leu Pro
            420                 425                 430
```

Leu Asn Thr Asp Ala Tyr Leu Ser Leu Gln Glu Leu Gln Gly Gln Asp
        435   440   445

Pro Thr His Leu Val
    450

<210> 44
<211> 309
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-FKBP(F36V)- TPOR/MPLR(478-582)-IL2Rbsmall(393-433,518-551)

<400> 44

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1   5   10   15

His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
            20   25   30

Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
        35   40   45

Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
    50   55   60

Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65   70   75   80

Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
                85   90   95

Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
            100   105   110

Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
        115   120   125

Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile
    130   135   140

```
Ser Leu Val Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu
145                 150                 155                 160


Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu
                165                 170                 175


Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly
            180                 185                 190


Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val
        195                 200                 205


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


Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu Asp Glu Gly Val Ala Gly
225                 230                 235                 240


Ala Pro Thr Gly Ser Ser Pro Gln Pro Leu Gln Pro Leu Ser Gly Glu
                245                 250                 255


Asp Asp Ala Tyr Cys Thr Phe Pro Ser Arg Asp Asp Leu Leu Leu Phe
            260                 265                 270


Ser Pro Ser Gly Gln Gly Glu Phe Arg Ala Leu Asn Ala Arg Leu Pro
        275                 280                 285


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


Pro Thr His Leu Val
305
```

<210> 45
<211> 350
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-FKBP(F36V)- TPOR/MPLR(478-582)-IL2Rbsmall(339-379,393-433,518-551)

<400> 45

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                  10                  15

His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
            20                  25                  30

Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
        35                  40                  45

Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
    50                  55                  60

Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65                  70                  75                  80

Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
                85                  90                  95

Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
            100                 105                 110

Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
        115                 120                 125

Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile
    130                 135                 140

Ser Leu Val Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu
145                 150                 155                 160

Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu
                165                 170                 175

Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly
            180                 185                 190

Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val
        195                 200                 205

Ser Asp Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro
```

210 215 220

Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu Gln Gln Asp Lys Val Pro
225 230 235 240

Glu Pro Ala Ser Leu Ser Ser Asn His Ser Leu Thr Ser Cys Phe Thr
245 250 255

Asn Gln Gly Tyr Phe Phe Phe His Leu Pro Asp Ala Leu Glu Ile Glu
260 265 270

Ala Cys Gln Asp Glu Gly Val Ala Gly Ala Pro Thr Gly Ser Ser Pro
275 280 285

Gln Pro Leu Gln Pro Leu Ser Gly Glu Asp Asp Ala Tyr Cys Thr Phe
290 295 300

Pro Ser Arg Asp Asp Leu Leu Leu Phe Ser Pro Ser Gly Gln Gly Glu
305 310 315 320

Phe Arg Ala Leu Asn Ala Arg Leu Pro Leu Asn Thr Asp Ala Tyr Leu
325 330 335

Ser Leu Gln Glu Leu Gln Gly Gln Asp Pro Thr His Leu Val
340 345 350

<210> 46
<211> 429
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-FKBP(F36V)- TPOR/MPLR(478-582)-IL7R(316-459)-IL12Rb2(775-825)

<400> 46

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
20 25 30

Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr

```
        35                  40                  45

Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
    50                  55                  60

Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65                  70                  75                  80

Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
                85                  90                  95

Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
            100                 105                 110

Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
        115                 120                 125

Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile
    130                 135                 140

Ser Leu Val Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu
145                 150                 155                 160

Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu
                165                 170                 175

Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly
            180                 185                 190

Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val
        195                 200                 205

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

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

Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys
                245                 250                 255
```

```
Gln Arg Leu Gly Gly Asp Val Gln Ser Pro Asn Cys Pro Ser Glu Asp
            260                 265                 270

Val Val Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys
        275                 280                 285

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

Arg Ser Leu Asp Cys Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr
305                 310                 315                 320

Gln Asp Leu Leu Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro
                325                 330                 335

Pro Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln
            340                 345                 350

Gly Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr
        355                 360                 365

Val Thr Met Ser Ser Phe Tyr Gln Asn Gln Ser Asp Pro Lys Pro Glu
    370                 375                 380

Asn Pro Ala Cys Pro Trp Thr Val Leu Pro Ala Gly Asp Leu Pro Thr
385                 390                 395                 400

His Asp Gly Tyr Leu Pro Ser Asn Ile Asp Asp Leu Pro Ser His Glu
                405                 410                 415

Ala Pro Leu Ala Asp Ser Leu Glu Glu Leu Glu Pro Gln
            420                 425
```

<210> 47
<211> 595
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-FKBP(F36V)- TPOR/MPLR(478-582)-IL7R(316-459)-IL21R(322-538)

<400> 47

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                  10                  15

His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
            20                  25                  30

Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
        35                  40                  45

Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
    50                  55                  60

Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65                  70                  75                  80

Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
                85                  90                  95

Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
            100                 105                 110

Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
        115                 120                 125

Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile
    130                 135                 140

Ser Leu Val Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu
145                 150                 155                 160

Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu
                165                 170                 175

Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly
            180                 185                 190

Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val
        195                 200                 205

Ser Asp Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro
```

```
    210                 215                 220

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

Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys
                245                 250                 255

Gln Arg Leu Gly Gly Asp Val Gln Ser Pro Asn Cys Pro Ser Glu Asp
            260                 265                 270

Val Val Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys
        275                 280                 285

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

Arg Ser Leu Asp Cys Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr
305                 310                 315                 320

Gln Asp Leu Leu Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro
                325                 330                 335

Pro Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln
            340                 345                 350

Gly Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr
        355                 360                 365

Val Thr Met Ser Ser Phe Tyr Gln Asn Gln Pro Arg Ser Pro Ala Lys
    370                 375                 380

Arg Leu Gln Leu Thr Glu Leu Gln Glu Pro Ala Glu Leu Val Glu Ser
385                 390                 395                 400

Asp Gly Val Pro Lys Pro Ser Phe Trp Pro Thr Ala Gln Asn Ser Gly
                405                 410                 415

Gly Ser Ala Tyr Ser Glu Glu Arg Asp Arg Pro Tyr Gly Leu Val Ser
            420                 425                 430
```

```
Ile Asp Thr Val Thr Val Leu Asp Ala Glu Gly Pro Cys Thr Trp Pro
        435                 440                 445

Cys Ser Cys Glu Asp Asp Gly Tyr Pro Ala Leu Asp Leu Asp Ala Gly
    450                 455                 460

Leu Glu Pro Ser Pro Gly Leu Glu Asp Pro Leu Leu Asp Ala Gly Thr
465                 470                 475                 480

Thr Val Leu Ser Cys Gly Cys Val Ser Ala Gly Ser Pro Gly Leu Gly
                485                 490                 495

Gly Pro Leu Gly Ser Leu Leu Asp Arg Leu Lys Pro Pro Leu Ala Asp
            500                 505                 510

Gly Glu Asp Trp Ala Gly Gly Leu Pro Trp Gly Gly Arg Ser Pro Gly
        515                 520                 525

Gly Val Ser Glu Ser Glu Ala Gly Ser Pro Leu Ala Gly Leu Asp Met
    530                 535                 540

Asp Thr Phe Asp Ser Gly Phe Val Gly Ser Asp Cys Ser Ser Pro Val
545                 550                 555                 560

Glu Cys Asp Phe Thr Ser Pro Gly Asp Glu Gly Pro Pro Arg Ser Tyr
                565                 570                 575

Leu Arg Gln Trp Val Val Ile Pro Pro Pro Leu Ser Ser Pro Gly Pro
            580                 585                 590

Gln Ala Ser
        595
```

<210> 48
<211> 595
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-FKBP(F36V)- TPOR/MPLR(478-582)- IL21R(322-538)-IL7R(316-459)

<400> 48

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                  10                  15

His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
            20                  25                  30

Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
        35                  40                  45

Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
    50                  55                  60

Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65                  70                  75                  80

Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
                85                  90                  95

Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
            100                 105                 110

Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
        115                 120                 125

Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile
    130                 135                 140

Ser Leu Val Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu
145                 150                 155                 160

Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu
                165                 170                 175

Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly
            180                 185                 190

Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val
        195                 200                 205

Ser Asp Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro
```

```
    210                 215                 220

Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu Pro Arg Ser Pro Ala Lys
225                 230                 235                 240

Arg Leu Gln Leu Thr Glu Leu Gln Glu Pro Ala Glu Leu Val Glu Ser
                245                 250                 255

Asp Gly Val Pro Lys Pro Ser Phe Trp Pro Thr Ala Gln Asn Ser Gly
            260                 265                 270

Gly Ser Ala Tyr Ser Glu Glu Arg Asp Arg Pro Tyr Gly Leu Val Ser
        275                 280                 285

Ile Asp Thr Val Thr Val Leu Asp Ala Glu Gly Pro Cys Thr Trp Pro
    290                 295                 300

Cys Ser Cys Glu Asp Asp Gly Tyr Pro Ala Leu Asp Leu Asp Ala Gly
305                 310                 315                 320

Leu Glu Pro Ser Pro Gly Leu Glu Asp Pro Leu Leu Asp Ala Gly Thr
                325                 330                 335

Thr Val Leu Ser Cys Gly Cys Val Ser Ala Gly Ser Pro Gly Leu Gly
            340                 345                 350

Gly Pro Leu Gly Ser Leu Leu Asp Arg Leu Lys Pro Pro Leu Ala Asp
        355                 360                 365

Gly Glu Asp Trp Ala Gly Gly Leu Pro Trp Gly Gly Arg Ser Pro Gly
    370                 375                 380

Gly Val Ser Glu Ser Glu Ala Gly Ser Pro Leu Ala Gly Leu Asp Met
385                 390                 395                 400

Asp Thr Phe Asp Ser Gly Phe Val Gly Ser Asp Cys Ser Ser Pro Val
                405                 410                 415

Glu Cys Asp Phe Thr Ser Pro Gly Asp Glu Gly Pro Pro Arg Ser Tyr
            420                 425                 430
```

```
Leu Arg Gln Trp Val Val Ile Pro Pro Pro Leu Ser Ser Pro Gly Pro
        435                 440                 445

Gln Ala Ser Ala Arg Asp Glu Val Glu Gly Phe Leu Gln Asp Thr Phe
    450                 455                 460

Pro Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly Asp Val
465                 470                 475                 480

Gln Ser Pro Asn Cys Pro Ser Glu Asp Val Val Ile Thr Pro Glu Ser
                485                 490                 495

Phe Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn Val Ser Ala
            500                 505                 510

Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg Glu
        515                 520                 525

Ser Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu Ser Leu
    530                 535                 540

Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln Ser Gly
545                 550                 555                 560

Ile Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu Thr Ser
                565                 570                 575

Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr
            580                 585                 590

Gln Asn Gln
        595
```

<210> 49
<211> 526
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-FKBP(F36V)-TPOR/MPLR(478-582)-IL2Rbsmall(393-433,518-551)-IL21R(322-538)

<400> 49

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                  10                  15

His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
            20                  25                  30

Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
        35                  40                  45

Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
    50                  55                  60

Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65                  70                  75                  80

Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
                85                  90                  95

Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
            100                 105                 110

Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
        115                 120                 125

Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile
    130                 135                 140

Ser Leu Val Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu
145                 150                 155                 160

Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu
                165                 170                 175

Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly
            180                 185                 190

Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val
        195                 200                 205
```

```
Ser Asp Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro
    210                 215                 220

Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu Asp Glu Gly Val Ala Gly
225                 230                 235                 240

Ala Pro Thr Gly Ser Ser Pro Gln Pro Leu Gln Pro Leu Ser Gly Glu
                245                 250                 255

Asp Asp Ala Tyr Cys Thr Phe Pro Ser Arg Asp Asp Leu Leu Leu Phe
            260                 265                 270

Ser Pro Ser Gly Gln Gly Glu Phe Arg Ala Leu Asn Ala Arg Leu Pro
        275                 280                 285

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

Pro Thr His Leu Val Pro Arg Ser Pro Ala Lys Arg Leu Gln Leu Thr
305                 310                 315                 320

Glu Leu Gln Glu Pro Ala Glu Leu Val Glu Ser Asp Gly Val Pro Lys
                325                 330                 335

Pro Ser Phe Trp Pro Thr Ala Gln Asn Ser Gly Gly Ser Ala Tyr Ser
            340                 345                 350

Glu Glu Arg Asp Arg Pro Tyr Gly Leu Val Ser Ile Asp Thr Val Thr
        355                 360                 365

Val Leu Asp Ala Glu Gly Pro Cys Thr Trp Pro Cys Ser Cys Glu Asp
    370                 375                 380

Asp Gly Tyr Pro Ala Leu Asp Leu Asp Ala Gly Leu Glu Pro Ser Pro
385                 390                 395                 400

Gly Leu Glu Asp Pro Leu Leu Asp Ala Gly Thr Thr Val Leu Ser Cys
                405                 410                 415

Gly Cys Val Ser Ala Gly Ser Pro Gly Leu Gly Gly Pro Leu Gly Ser
            420                 425                 430
```

Leu Leu Asp Arg Leu Lys Pro Pro Leu Ala Asp Gly Glu Asp Trp Ala
435 440 445

Gly Gly Leu Pro Trp Gly Gly Arg Ser Pro Gly Gly Val Ser Glu Ser
450 455 460

Glu Ala Gly Ser Pro Leu Ala Gly Leu Asp Met Asp Thr Phe Asp Ser
465 470 475 480

Gly Phe Val Gly Ser Asp Cys Ser Ser Pro Val Glu Cys Asp Phe Thr
485 490 495

Ser Pro Gly Asp Glu Gly Pro Pro Arg Ser Tyr Leu Arg Gln Trp Val
500 505 510

Val Ile Pro Pro Pro Leu Ser Ser Pro Gly Pro Gln Ala Ser
515 520 525

<210> 50
<211> 526
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-FKBP(F36V)- TPOR/MPLR(478-582)-
IL21R(322-538)-IL2Rbsmall(393-433,518-551)

<400> 50

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
20 25 30

Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
35 40 45

Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
50 55 60

Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly

```
65                  70                  75                  80

Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
                85                  90                  95

Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
            100                 105                 110

Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
        115                 120                 125

Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile
    130                 135                 140

Ser Leu Val Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu
145                 150                 155                 160

Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu
                165                 170                 175

Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly
            180                 185                 190

Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val
        195                 200                 205

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

Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu Pro Arg Ser Pro Ala Lys
225                 230                 235                 240

Arg Leu Gln Leu Thr Glu Leu Gln Glu Pro Ala Glu Leu Val Glu Ser
                245                 250                 255

Asp Gly Val Pro Lys Pro Ser Phe Trp Pro Thr Ala Gln Asn Ser Gly
            260                 265                 270

Gly Ser Ala Tyr Ser Glu Glu Arg Asp Arg Pro Tyr Gly Leu Val Ser
        275                 280                 285
```

```
Ile Asp Thr Val Thr Val Leu Asp Ala Glu Gly Pro Cys Thr Trp Pro
    290                 295                 300

Cys Ser Cys Glu Asp Asp Gly Tyr Pro Ala Leu Asp Leu Asp Ala Gly
305                 310                 315                 320

Leu Glu Pro Ser Pro Gly Leu Glu Asp Pro Leu Leu Asp Ala Gly Thr
                325                 330                 335

Thr Val Leu Ser Cys Gly Cys Val Ser Ala Gly Ser Pro Gly Leu Gly
            340                 345                 350

Gly Pro Leu Gly Ser Leu Leu Asp Arg Leu Lys Pro Pro Leu Ala Asp
        355                 360                 365

Gly Glu Asp Trp Ala Gly Gly Leu Pro Trp Gly Gly Arg Ser Pro Gly
    370                 375                 380

Gly Val Ser Glu Ser Glu Ala Gly Ser Pro Leu Ala Gly Leu Asp Met
385                 390                 395                 400

Asp Thr Phe Asp Ser Gly Phe Val Gly Ser Asp Cys Ser Ser Pro Val
                405                 410                 415

Glu Cys Asp Phe Thr Ser Pro Gly Asp Glu Gly Pro Pro Arg Ser Tyr
            420                 425                 430

Leu Arg Gln Trp Val Val Ile Pro Pro Pro Leu Ser Ser Pro Gly Pro
        435                 440                 445

Gln Ala Ser Asp Glu Gly Val Ala Gly Ala Pro Thr Gly Ser Ser Pro
    450                 455                 460

Gln Pro Leu Gln Pro Leu Ser Gly Glu Asp Asp Ala Tyr Cys Thr Phe
465                 470                 475                 480

Pro Ser Arg Asp Asp Leu Leu Leu Phe Ser Pro Ser Gly Gln Gly Glu
                485                 490                 495

Phe Arg Ala Leu Asn Ala Arg Leu Pro Leu Asn Thr Asp Ala Tyr Leu
```

```
            500                 505                 510


Ser Leu Gln Glu Leu Gln Gly Gln Asp Pro Thr His Leu Val
        515                 520                 525


<210>  51
<211>  567
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  CD8 SS-FKBP(F36V)-
TPOR/MPLR(478-582)-IL2Rbsmall(339-379,393-433,518-551)-IL21R(322-538)

<400>  51

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                   10                  15


His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
            20                  25                  30


Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
        35                  40                  45


Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
    50                  55                  60


Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65                  70                  75                  80


Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
                85                  90                  95


Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
            100                 105                 110


Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
        115                 120                 125


Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile
    130                 135                 140
```

```
Ser Leu Val Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu
145                 150                 155                 160

Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu
                165                 170                 175

Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly
            180                 185                 190

Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val
        195                 200                 205

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

Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu Gln Gln Asp Lys Val Pro
225                 230                 235                 240

Glu Pro Ala Ser Leu Ser Ser Asn His Ser Leu Thr Ser Cys Phe Thr
                245                 250                 255

Asn Gln Gly Tyr Phe Phe Phe His Leu Pro Asp Ala Leu Glu Ile Glu
            260                 265                 270

Ala Cys Gln Asp Glu Gly Val Ala Gly Ala Pro Thr Gly Ser Ser Pro
        275                 280                 285

Gln Pro Leu Gln Pro Leu Ser Gly Glu Asp Asp Ala Tyr Cys Thr Phe
    290                 295                 300

Pro Ser Arg Asp Asp Leu Leu Leu Phe Ser Pro Ser Gly Gln Gly Glu
305                 310                 315                 320

Phe Arg Ala Leu Asn Ala Arg Leu Pro Leu Asn Thr Asp Ala Tyr Leu
                325                 330                 335

Ser Leu Gln Glu Leu Gln Gly Gln Asp Pro Thr His Leu Val Pro Arg
            340                 345                 350

Ser Pro Ala Lys Arg Leu Gln Leu Thr Glu Leu Gln Glu Pro Ala Glu
        355                 360                 365
```

```
Leu Val Glu Ser Asp Gly Val Pro Lys Pro Ser Phe Trp Pro Thr Ala
    370                 375                 380

Gln Asn Ser Gly Gly Ser Ala Tyr Ser Glu Glu Arg Asp Arg Pro Tyr
385                 390                 395                 400

Gly Leu Val Ser Ile Asp Thr Val Thr Val Leu Asp Ala Glu Gly Pro
                405                 410                 415

Cys Thr Trp Pro Cys Ser Cys Glu Asp Asp Gly Tyr Pro Ala Leu Asp
            420                 425                 430

Leu Asp Ala Gly Leu Glu Pro Ser Pro Gly Leu Glu Asp Pro Leu Leu
        435                 440                 445

Asp Ala Gly Thr Thr Val Leu Ser Cys Gly Cys Val Ser Ala Gly Ser
    450                 455                 460

Pro Gly Leu Gly Gly Pro Leu Gly Ser Leu Leu Asp Arg Leu Lys Pro
465                 470                 475                 480

Pro Leu Ala Asp Gly Glu Asp Trp Ala Gly Gly Leu Pro Trp Gly Gly
                485                 490                 495

Arg Ser Pro Gly Gly Val Ser Glu Ser Glu Ala Gly Ser Pro Leu Ala
            500                 505                 510

Gly Leu Asp Met Asp Thr Phe Asp Ser Gly Phe Val Gly Ser Asp Cys
        515                 520                 525

Ser Ser Pro Val Glu Cys Asp Phe Thr Ser Pro Gly Asp Glu Gly Pro
    530                 535                 540

Pro Arg Ser Tyr Leu Arg Gln Trp Val Val Ile Pro Pro Pro Leu Ser
545                 550                 555                 560

Ser Pro Gly Pro Gln Ala Ser
                565
```

<210> 52
<211> 567
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-FKBP(F36V)- TPOR/MPLR(478-582)-
IL21R(322-538)-IL2Rbsmall(339-379,393-433,518-551)

<400> 52

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
20 25 30

Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
35 40 45

Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
50 55 60

Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65 70 75 80

Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
85 90 95

Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
100 105 110

Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
115 120 125

Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile
130 135 140

Ser Leu Val Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu
145 150 155 160

Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu
165 170 175

```
Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly
            180                 185                 190

Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val
        195                 200                 205

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

Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu Pro Arg Ser Pro Ala Lys
225                 230                 235                 240

Arg Leu Gln Leu Thr Glu Leu Gln Glu Pro Ala Glu Leu Val Glu Ser
                245                 250                 255

Asp Gly Val Pro Lys Pro Ser Phe Trp Pro Thr Ala Gln Asn Ser Gly
            260                 265                 270

Gly Ser Ala Tyr Ser Glu Glu Arg Asp Arg Pro Tyr Gly Leu Val Ser
        275                 280                 285

Ile Asp Thr Val Thr Val Leu Asp Ala Glu Gly Pro Cys Thr Trp Pro
    290                 295                 300

Cys Ser Cys Glu Asp Asp Gly Tyr Pro Ala Leu Asp Leu Asp Ala Gly
305                 310                 315                 320

Leu Glu Pro Ser Pro Gly Leu Glu Asp Pro Leu Leu Asp Ala Gly Thr
                325                 330                 335

Thr Val Leu Ser Cys Gly Cys Val Ser Ala Gly Ser Pro Gly Leu Gly
            340                 345                 350

Gly Pro Leu Gly Ser Leu Leu Asp Arg Leu Lys Pro Pro Leu Ala Asp
        355                 360                 365

Gly Glu Asp Trp Ala Gly Gly Leu Pro Trp Gly Gly Arg Ser Pro Gly
    370                 375                 380

Gly Val Ser Glu Ser Glu Ala Gly Ser Pro Leu Ala Gly Leu Asp Met
```

385 390 395 400

Asp Thr Phe Asp Ser Gly Phe Val Gly Ser Asp Cys Ser Ser Pro Val
405 410 415

Glu Cys Asp Phe Thr Ser Pro Gly Asp Glu Gly Pro Pro Arg Ser Tyr
420 425 430

Leu Arg Gln Trp Val Val Ile Pro Pro Pro Leu Ser Ser Pro Gly Pro
435 440 445

Gln Ala Ser Gln Gln Asp Lys Val Pro Glu Pro Ala Ser Leu Ser Ser
450 455 460

Asn His Ser Leu Thr Ser Cys Phe Thr Asn Gln Gly Tyr Phe Phe Phe
465 470 475 480

His Leu Pro Asp Ala Leu Glu Ile Glu Ala Cys Gln Asp Glu Gly Val
485 490 495

Ala Gly Ala Pro Thr Gly Ser Ser Pro Gln Pro Leu Gln Pro Leu Ser
500 505 510

Gly Glu Asp Asp Ala Tyr Cys Thr Phe Pro Ser Arg Asp Asp Leu Leu
515 520 525

Leu Phe Ser Pro Ser Gly Gln Gly Glu Phe Arg Ala Leu Asn Ala Arg
530 535 540

Leu Pro Leu Asn Thr Asp Ala Tyr Leu Ser Leu Gln Glu Leu Gln Gly
545 550 555 560

Gln Asp Pro Thr His Leu Val
565

<210> 53
<211> 453
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-FKBP(F36V)-

TPOR/MPLR(478-582)-IL2Rbsmall(393-433,518-551)-IL7R(316-459)

<400> 53

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                  10                  15


His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
            20                  25                  30


Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
        35                  40                  45


Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
    50                  55                  60


Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65                  70                  75                  80


Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
                85                  90                  95


Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
            100                 105                 110


Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
        115                 120                 125


Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile
    130                 135                 140


Ser Leu Val Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu
145                 150                 155                 160


Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu
                165                 170                 175


Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly
            180                 185                 190


Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val
        195                 200                 205
```

```
Ser Asp Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro
    210                 215                 220

Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu Asp Glu Gly Val Ala Gly
225                 230                 235                 240

Ala Pro Thr Gly Ser Ser Pro Gln Pro Leu Gln Pro Leu Ser Gly Glu
                245                 250                 255

Asp Asp Ala Tyr Cys Thr Phe Pro Ser Arg Asp Asp Leu Leu Leu Phe
            260                 265                 270

Ser Pro Ser Gly Gln Gly Glu Phe Arg Ala Leu Asn Ala Arg Leu Pro
        275                 280                 285

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

Pro Thr His Leu Val Ala Arg Asp Glu Val Glu Gly Phe Leu Gln Asp
305                 310                 315                 320

Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly
                325                 330                 335

Asp Val Gln Ser Pro Asn Cys Pro Ser Glu Asp Val Val Ile Thr Pro
            340                 345                 350

Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn Val
        355                 360                 365

Ser Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys
    370                 375                 380

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

Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln
                405                 410                 415
```

Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu
420 425 430

Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser
435 440 445

Phe Tyr Gln Asn Gln
450

<210> 54
<211> 453
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-FKBP(F36V)-
TPOR/MPLR(478-582)-IL7R(316-459)-IL2Rbsmall(393-433,518-551)

<400> 54

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
20 25 30

Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
35 40 45

Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
50 55 60

Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65 70 75 80

Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
85 90 95

Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
100 105 110

Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
115 120 125

```
Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile
    130                 135                 140

Ser Leu Val Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu
145                 150                 155                 160

Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu
                165                 170                 175

Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly
            180                 185                 190

Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val
        195                 200                 205

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

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

Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys
                245                 250                 255

Gln Arg Leu Gly Gly Asp Val Gln Ser Pro Asn Cys Pro Ser Glu Asp
            260                 265                 270

Val Val Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys
        275                 280                 285

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

Arg Ser Leu Asp Cys Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr
305                 310                 315                 320

Gln Asp Leu Leu Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro
                325                 330                 335

Pro Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln
```

```
            340                 345                 350

Gly Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr
        355                 360                 365

Val Thr Met Ser Ser Phe Tyr Gln Asn Gln Asp Glu Gly Val Ala Gly
    370                 375                 380

Ala Pro Thr Gly Ser Ser Pro Gln Pro Leu Gln Pro Leu Ser Gly Glu
385                 390                 395                 400

Asp Asp Ala Tyr Cys Thr Phe Pro Ser Arg Asp Asp Leu Leu Leu Phe
                405                 410                 415

Ser Pro Ser Gly Gln Gly Glu Phe Arg Ala Leu Asn Ala Arg Leu Pro
            420                 425                 430

Leu Asn Thr Asp Ala Tyr Leu Ser Leu Gln Glu Leu Gln Gly Gln Asp
        435                 440                 445

Pro Thr His Leu Val
    450


<210>  55
<211>  494
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  CD8 SS-FKBP(F36V)- TPOR/MPLR(478-582)-
IL2Rbsmall(339-379,393-433,518-551)-IL7R(316-459)

<400>  55

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                   10                  15

His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
            20                  25                  30

Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
        35                  40                  45
```

```
Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
    50                  55                  60

Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65                  70                  75                  80

Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
                85                  90                  95

Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
            100                 105                 110

Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
        115                 120                 125

Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile
    130                 135                 140

Ser Leu Val Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu
145                 150                 155                 160

Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu
                165                 170                 175

Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly
            180                 185                 190

Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val
        195                 200                 205

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

Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu Gln Gln Asp Lys Val Pro
225                 230                 235                 240

Glu Pro Ala Ser Leu Ser Ser Asn His Ser Leu Thr Ser Cys Phe Thr
                245                 250                 255

Asn Gln Gly Tyr Phe Phe Phe His Leu Pro Asp Ala Leu Glu Ile Glu
            260                 265                 270
```

```
Ala Cys Gln Asp Glu Gly Val Ala Gly Ala Pro Thr Gly Ser Ser Pro
        275                 280                 285

Gln Pro Leu Gln Pro Leu Ser Gly Glu Asp Asp Ala Tyr Cys Thr Phe
    290                 295                 300

Pro Ser Arg Asp Asp Leu Leu Leu Phe Ser Pro Ser Gly Gln Gly Glu
305                 310                 315                 320

Phe Arg Ala Leu Asn Ala Arg Leu Pro Leu Asn Thr Asp Ala Tyr Leu
                325                 330                 335

Ser Leu Gln Glu Leu Gln Gly Gln Asp Pro Thr His Leu Val Ala Arg
            340                 345                 350

Asp Glu Val Glu Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu
        355                 360                 365

Glu Ser Glu Lys Gln Arg Leu Gly Gly Asp Val Gln Ser Pro Asn Cys
    370                 375                 380

Pro Ser Glu Asp Val Val Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser
385                 390                 395                 400

Ser Leu Thr Cys Leu Ala Gly Asn Val Ser Ala Cys Asp Ala Pro Ile
                405                 410                 415

Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg Glu Ser Gly Lys Asn Gly
            420                 425                 430

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

Thr Leu Pro Pro Pro Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn
    450                 455                 460

Pro Val Ala Gln Gly Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln
465                 470                 475                 480
```

Glu Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln Asn Gln
485 490

<210> 56
<211> 494
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-FKBP(F36V)- TPOR/MPLR(478-582)-IL7R(316-459)-IL2Rbsmall(339-379,393-433,518-551)

<400> 56

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
20 25 30

Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
35 40 45

Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
50 55 60

Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65 70 75 80

Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
85 90 95

Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
100 105 110

Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
115 120 125

Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile
130 135 140

Ser Leu Val Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu
145 150 155 160

```
Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu
                165                 170                 175

Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly
            180                 185                 190

Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val
        195                 200                 205

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

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

Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys
                245                 250                 255

Gln Arg Leu Gly Gly Asp Val Gln Ser Pro Asn Cys Pro Ser Glu Asp
            260                 265                 270

Val Val Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys
        275                 280                 285

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

Arg Ser Leu Asp Cys Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr
305                 310                 315                 320

Gln Asp Leu Leu Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro
                325                 330                 335

Pro Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln
            340                 345                 350

Gly Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr
        355                 360                 365

Val Thr Met Ser Ser Phe Tyr Gln Asn Gln Gln Gln Asp Lys Val Pro
```

370 375 380

Glu Pro Ala Ser Leu Ser Ser Asn His Ser Leu Thr Ser Cys Phe Thr
385 390 395 400

Asn Gln Gly Tyr Phe Phe Phe His Leu Pro Asp Ala Leu Glu Ile Glu
405 410 415

Ala Cys Gln Asp Glu Gly Val Ala Gly Ala Pro Thr Gly Ser Ser Pro
420 425 430

Gln Pro Leu Gln Pro Leu Ser Gly Glu Asp Asp Ala Tyr Cys Thr Phe
435 440 445

Pro Ser Arg Asp Asp Leu Leu Leu Phe Ser Pro Ser Gly Gln Gly Glu
450 455 460

Phe Arg Ala Leu Asn Ala Arg Leu Pro Leu Asn Thr Asp Ala Tyr Leu
465 470 475 480

Ser Leu Gln Glu Leu Gln Gly Gln Asp Pro Thr His Leu Val
485 490

<210> 57
<211> 429
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-FKBP(F36V)-PD1(156-191)-TPOR/MPLR
(514-582)-IL7R(316-459)-IL12Rb2(775-825)

<400> 57

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
20 25 30

Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
35 40 45

```
Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
    50                  55                  60

Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65                  70                  75                  80

Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
                85                  90                  95

Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
            100                 105                 110

Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
        115                 120                 125

Glu Pro Ser Pro Ser Pro Arg Pro Ala Gly Gln Phe Gln Thr Leu Val
    130                 135                 140

Val Gly Val Val Gly Gly Leu Leu Gly Ser Leu Val Leu Leu Val Trp
145                 150                 155                 160

Val Leu Ala Val Ile Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu
                165                 170                 175

Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly
            180                 185                 190

Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val
        195                 200                 205

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

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

Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys
                245                 250                 255

Gln Arg Leu Gly Gly Asp Val Gln Ser Pro Asn Cys Pro Ser Glu Asp
            260                 265                 270
```

Val Val Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys
275 280 285

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

Arg Ser Leu Asp Cys Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr
305 310 315 320

Gln Asp Leu Leu Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro
325 330 335

Pro Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln
340 345 350

Gly Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr
355 360 365

Val Thr Met Ser Ser Phe Tyr Gln Asn Gln Ser Asp Pro Lys Pro Glu
370 375 380

Asn Pro Ala Cys Pro Trp Thr Val Leu Pro Ala Gly Asp Leu Pro Thr
385 390 395 400

His Asp Gly Tyr Leu Pro Ser Asn Ile Asp Asp Leu Pro Ser His Glu
405 410 415

Ala Pro Leu Ala Asp Ser Leu Glu Glu Leu Glu Pro Gln
420 425

<210> 58
<211> 288
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-FKBP(F36V)- TPOR/MPLR(478-582)-EGFR(1122-1165)

<400> 58

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

```
His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
            20                  25                  30

Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
        35                  40                  45

Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
    50                  55                  60

Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65                  70                  75                  80

Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
                85                  90                  95

Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
            100                 105                 110

Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
        115                 120                 125

Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile
    130                 135                 140

Ser Leu Val Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu
145                 150                 155                 160

Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu
                165                 170                 175

Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly
            180                 185                 190

Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val
        195                 200                 205

Ser Asp Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro
    210                 215                 220
```

```
Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu Pro Glu Tyr Leu Asn Thr
225                 230                 235                 240


Val Gln Pro Thr Cys Val Asn Ser Thr Phe Asp Ser Pro Ala His Trp
                245                 250                 255


Ala Gln Lys Gly Ser His Gln Ile Ser Leu Asp Asn Pro Asp Tyr Gln
            260                 265                 270


Gln Asp Phe Phe Pro Lys Glu Ala Lys Pro Asn Gly Ile Phe Lys Gly
        275                 280                 285


<210>  59
<211>  508
<212>  PRT
<213>  Homo sapiens

<400>  59

Met Asp His Leu Gly Ala Ser Leu Trp Pro Gln Val Gly Ser Leu Cys
1               5                   10                  15


Leu Leu Leu Ala Gly Ala Ala Trp Ala Pro Pro Pro Asn Leu Pro Asp
            20                  25                  30


Pro Lys Phe Glu Ser Lys Ala Ala Leu Leu Ala Ala Arg Gly Pro Glu
        35                  40                  45


Glu Leu Leu Cys Phe Thr Glu Arg Leu Glu Asp Leu Val Cys Phe Trp
    50                  55                  60


Glu Glu Ala Ala Ser Ala Gly Val Gly Pro Gly Asn Tyr Ser Phe Ser
65                  70                  75                  80


Tyr Gln Leu Glu Asp Glu Pro Trp Lys Leu Cys Arg Leu His Gln Ala
                85                  90                  95


Pro Thr Ala Arg Gly Ala Val Arg Phe Trp Cys Ser Leu Pro Thr Ala
            100                 105                 110


Asp Thr Ser Ser Phe Val Pro Leu Glu Leu Arg Val Thr Ala Ala Ser
        115                 120                 125
```

```
Gly Ala Pro Arg Tyr His Arg Val Ile His Ile Asn Glu Val Val Leu
    130                 135                 140

Leu Asp Ala Pro Val Gly Leu Val Ala Arg Leu Ala Asp Glu Ser Gly
145                 150                 155                 160

His Val Val Leu Arg Trp Leu Pro Pro Pro Glu Thr Pro Met Thr Ser
                165                 170                 175

His Ile Arg Tyr Glu Val Asp Val Ser Ala Gly Asn Gly Ala Gly Ser
            180                 185                 190

Val Gln Arg Val Glu Ile Leu Glu Gly Arg Thr Glu Cys Val Leu Ser
        195                 200                 205

Asn Leu Arg Gly Arg Thr Arg Tyr Thr Phe Ala Val Arg Ala Arg Met
    210                 215                 220

Ala Glu Pro Ser Phe Gly Gly Phe Trp Ser Ala Trp Ser Glu Pro Val
225                 230                 235                 240

Ser Leu Leu Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser
                245                 250                 255

Leu Ile Leu Val Val Ile Leu Val Leu Leu Thr Val Leu Ala Leu Leu
            260                 265                 270

Ser His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser
        275                 280                 285

Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe
    290                 295                 300

Gln Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys
305                 310                 315                 320

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

Arg Cys Trp Gly Thr Met Gln Ala Val Glu Pro Gly Thr Asp Asp Glu
```

```
            340                 345                 350

Gly Pro Leu Leu Glu Pro Val Gly Ser Glu His Ala Gln Asp Thr Tyr
        355                 360                 365

Leu Val Leu Asp Lys Trp Leu Leu Pro Arg Asn Pro Pro Ser Glu Asp
    370                 375                 380

Leu Pro Gly Pro Gly Gly Ser Val Asp Ile Val Ala Met Asp Glu Gly
385                 390                 395                 400

Ser Glu Ala Ser Ser Cys Ser Ser Ala Leu Ala Ser Lys Pro Ser Pro
                405                 410                 415

Glu Gly Ala Ser Ala Ala Ser Phe Glu Tyr Thr Ile Leu Asp Pro Ser
            420                 425                 430

Ser Gln Leu Leu Arg Pro Trp Thr Leu Cys Pro Glu Leu Pro Pro Thr
        435                 440                 445

Pro Pro His Leu Lys Tyr Leu Tyr Leu Val Val Ser Asp Ser Gly Ile
    450                 455                 460

Ser Thr Asp Tyr Ser Ser Gly Asp Ser Gln Gly Ala Gln Gly Gly Leu
465                 470                 475                 480

Ser Asp Gly Pro Tyr Ser Asn Pro Tyr Glu Asn Ser Leu Ile Pro Ala
                485                 490                 495

Ala Glu Pro Leu Pro Pro Ser Tyr Val Ala Cys Ser
            500                 505


<210>  60
<211>  918
<212>  PRT
<213>  Homo sapiens

<400>  60

Met Leu Thr Leu Gln Thr Trp Leu Val Gln Ala Leu Phe Ile Phe Leu
1               5                   10                  15
```

```
Thr Thr Glu Ser Thr Gly Glu Leu Leu Asp Pro Cys Gly Tyr Ile Ser
            20                  25                  30

Pro Glu Ser Pro Val Val Gln Leu His Ser Asn Phe Thr Ala Val Cys
        35                  40                  45

Val Leu Lys Glu Lys Cys Met Asp Tyr Phe His Val Asn Ala Asn Tyr
    50                  55                  60

Ile Val Trp Lys Thr Asn His Phe Thr Ile Pro Lys Glu Gln Tyr Thr
65                  70                  75                  80

Ile Ile Asn Arg Thr Ala Ser Ser Val Thr Phe Thr Asp Ile Ala Ser
                85                  90                  95

Leu Asn Ile Gln Leu Thr Cys Asn Ile Leu Thr Phe Gly Gln Leu Glu
            100                 105                 110

Gln Asn Val Tyr Gly Ile Thr Ile Ile Ser Gly Leu Pro Pro Glu Lys
        115                 120                 125

Pro Lys Asn Leu Ser Cys Ile Val Asn Glu Gly Lys Lys Met Arg Cys
    130                 135                 140

Glu Trp Asp Arg Gly Arg Glu Thr His Leu Glu Thr Asn Phe Thr Leu
145                 150                 155                 160

Lys Ser Glu Trp Ala Thr His Lys Phe Ala Asp Cys Lys Ala Lys Arg
                165                 170                 175

Asp Thr Pro Thr Ser Cys Thr Val Asp Tyr Ser Thr Val Tyr Phe Val
            180                 185                 190

Asn Ile Glu Val Trp Val Glu Ala Glu Asn Ala Leu Gly Lys Val Thr
        195                 200                 205

Ser Asp His Ile Asn Phe Asp Pro Val Tyr Lys Val Lys Pro Asn Pro
    210                 215                 220

Pro His Asn Leu Ser Val Ile Asn Ser Glu Glu Leu Ser Ser Ile Leu
225                 230                 235                 240
```

```
Lys Leu Thr Trp Thr Asn Pro Ser Ile Lys Ser Val Ile Ile Leu Lys
                245                 250                 255

Tyr Asn Ile Gln Tyr Arg Thr Lys Asp Ala Ser Thr Trp Ser Gln Ile
            260                 265                 270

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

Leu Lys Pro Phe Thr Glu Tyr Val Phe Arg Ile Arg Cys Met Lys Glu
    290                 295                 300

Asp Gly Lys Gly Tyr Trp Ser Asp Trp Ser Glu Glu Ala Ser Gly Ile
305                 310                 315                 320

Thr Tyr Glu Asp Arg Pro Ser Lys Ala Pro Ser Phe Trp Tyr Lys Ile
                325                 330                 335

Asp Pro Ser His Thr Gln Gly Tyr Arg Thr Val Gln Leu Val Trp Lys
            340                 345                 350

Thr Leu Pro Pro Phe Glu Ala Asn Gly Lys Ile Leu Asp Tyr Glu Val
        355                 360                 365

Thr Leu Thr Arg Trp Lys Ser His Leu Gln Asn Tyr Thr Val Asn Ala
    370                 375                 380

Thr Lys Leu Thr Val Asn Leu Thr Asn Asp Arg Tyr Val Ala Thr Leu
385                 390                 395                 400

Thr Val Arg Asn Leu Val Gly Lys Ser Asp Ala Ala Val Leu Thr Ile
                405                 410                 415

Pro Ala Cys Asp Phe Gln Ala Thr His Pro Val Met Asp Leu Lys Ala
            420                 425                 430

Phe Pro Lys Asp Asn Met Leu Trp Val Glu Trp Thr Thr Pro Arg Glu
        435                 440                 445
```

```
Ser Val Lys Lys Tyr Ile Leu Glu Trp Cys Val Leu Ser Asp Lys Ala
    450                 455                 460

Pro Cys Ile Thr Asp Trp Gln Gln Glu Asp Gly Thr Val His Arg Thr
465                 470                 475                 480

Tyr Leu Arg Gly Asn Leu Ala Glu Ser Lys Cys Tyr Leu Ile Thr Val
                485                 490                 495

Thr Pro Val Tyr Ala Asp Gly Pro Gly Ser Pro Glu Ser Ile Lys Ala
            500                 505                 510

Tyr Leu Lys Gln Ala Pro Pro Ser Lys Gly Pro Thr Val Arg Thr Lys
        515                 520                 525

Lys Val Gly Lys Asn Glu Ala Val Leu Glu Trp Asp Gln Leu Pro Val
    530                 535                 540

Asp Val Gln Asn Gly Phe Ile Arg Asn Tyr Thr Ile Phe Tyr Arg Thr
545                 550                 555                 560

Ile Ile Gly Asn Glu Thr Ala Val Asn Val Asp Ser Ser His Thr Glu
                565                 570                 575

Tyr Thr Leu Ser Ser Leu Thr Ser Asp Thr Leu Tyr Met Val Arg Met
            580                 585                 590

Ala Ala Tyr Thr Asp Glu Gly Gly Lys Asp Gly Pro Glu Phe Thr Phe
        595                 600                 605

Thr Thr Pro Lys Phe Ala Gln Gly Glu Ile Glu Ala Ile Val Val Pro
    610                 615                 620

Val Cys Leu Ala Phe Leu Leu Thr Thr Leu Leu Gly Val Leu Phe Cys
625                 630                 635                 640

Phe Asn Lys Arg Asp Leu Ile Lys Lys His Ile Trp Pro Asn Val Pro
                645                 650                 655

Asp Pro Ser Lys Ser His Ile Ala Gln Trp Ser Pro His Thr Pro Pro
            660                 665                 670
```

```
Arg His Asn Phe Asn Ser Lys Asp Gln Met Tyr Ser Asp Gly Asn Phe
        675                 680                 685

Thr Asp Val Ser Val Val Glu Ile Glu Ala Asn Asp Lys Lys Pro Phe
    690                 695                 700

Pro Glu Asp Leu Lys Ser Leu Asp Leu Phe Lys Lys Glu Lys Ile Asn
705                 710                 715                 720

Thr Glu Gly His Ser Ser Gly Ile Gly Gly Ser Ser Cys Met Ser Ser
                725                 730                 735

Ser Arg Pro Ser Ile Ser Ser Ser Asp Glu Asn Glu Ser Ser Gln Asn
            740                 745                 750

Thr Ser Ser Thr Val Gln Tyr Ser Thr Val Val His Ser Gly Tyr Arg
        755                 760                 765

His Gln Val Pro Ser Val Gln Val Phe Ser Arg Ser Glu Ser Thr Gln
    770                 775                 780

Pro Leu Leu Asp Ser Glu Glu Arg Pro Glu Asp Leu Gln Leu Val Asp
785                 790                 795                 800

His Val Asp Gly Gly Asp Gly Ile Leu Pro Arg Gln Gln Tyr Phe Lys
                805                 810                 815

Gln Asn Cys Ser Gln His Glu Ser Ser Pro Asp Ile Ser His Phe Glu
            820                 825                 830

Arg Ser Lys Gln Val Ser Ser Val Asn Glu Glu Asp Phe Val Arg Leu
        835                 840                 845

Lys Gln Gln Ile Ser Asp His Ile Ser Gln Ser Cys Gly Ser Gly Gln
    850                 855                 860

Met Lys Met Phe Gln Glu Val Ser Ala Ala Asp Ala Phe Gly Pro Gly
865                 870                 875                 880
```

Thr Glu Gly Gln Val Glu Arg Phe Glu Thr Val Gly Met Glu Ala Ala
885 890 895

Thr Asp Glu Gly Met Pro Lys Ser Tyr Leu Pro Gln Thr Val Arg Gln
900 905 910

Gly Gly Tyr Met Pro Gln
915

<210> 61
<211> 622
<212> PRT
<213> Homo sapiens

<400> 61

Met Lys Glu Asn Val Ala Ser Ala Thr Val Phe Thr Leu Leu Leu Phe
1 5 10 15

Leu Asn Thr Cys Leu Leu Asn Gly Gln Leu Pro Pro Gly Lys Pro Glu
20 25 30

Ile Phe Lys Cys Arg Ser Pro Asn Lys Glu Thr Phe Thr Cys Trp Trp
35 40 45

Arg Pro Gly Thr Asp Gly Gly Leu Pro Thr Asn Tyr Ser Leu Thr Tyr
50 55 60

His Arg Glu Gly Glu Thr Leu Met His Glu Cys Pro Asp Tyr Ile Thr
65 70 75 80

Gly Gly Pro Asn Ser Cys His Phe Gly Lys Gln Tyr Thr Ser Met Trp
85 90 95

Arg Thr Tyr Ile Met Met Val Asn Ala Thr Asn Gln Met Gly Ser Ser
100 105 110

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

Pro Pro Leu Glu Leu Ala Val Glu Val Lys Gln Pro Glu Asp Arg Lys
130 135 140

```
Pro Tyr Leu Trp Ile Lys Trp Ser Pro Pro Thr Leu Ile Asp Leu Lys
145                 150                 155                 160

Thr Gly Trp Phe Thr Leu Leu Tyr Glu Ile Arg Leu Lys Pro Glu Lys
                165                 170                 175

Ala Ala Glu Trp Glu Ile His Phe Ala Gly Gln Gln Thr Glu Phe Lys
            180                 185                 190

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

Lys Pro Asp His Gly Tyr Trp Ser Ala Trp Ser Pro Ala Thr Phe Ile
    210                 215                 220

Gln Ile Pro Ser Asp Phe Thr Met Asn Asp Thr Thr Val Trp Ile Ser
225                 230                 235                 240

Val Ala Val Leu Ser Ala Val Ile Cys Leu Ile Ile Val Trp Ala Val
                245                 250                 255

Ala Leu Lys Gly Tyr Ser Met Val Thr Cys Ile Phe Pro Pro Val Pro
            260                 265                 270

Gly Pro Lys Ile Lys Gly Phe Asp Ala His Leu Leu Glu Lys Gly Lys
        275                 280                 285

Ser Glu Glu Leu Leu Ser Ala Leu Gly Cys Gln Asp Phe Pro Pro Thr
    290                 295                 300

Ser Asp Tyr Glu Asp Leu Leu Val Glu Tyr Leu Glu Val Asp Asp Ser
305                 310                 315                 320

Glu Asp Gln His Leu Met Ser Val His Ser Lys Glu His Pro Ser Gln
                325                 330                 335

Gly Met Lys Pro Thr Tyr Leu Asp Pro Asp Thr Asp Ser Gly Arg Gly
            340                 345                 350

Ser Cys Asp Ser Pro Ser Leu Leu Ser Glu Lys Cys Glu Glu Pro Gln
```

```
        355                 360                 365

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

Asn Pro Glu Thr Thr His Thr Trp Asp Pro Gln Cys Ile Ser Met Glu
385                 390                 395                 400

Gly Lys Ile Pro Tyr Phe His Ala Gly Gly Ser Lys Cys Ser Thr Trp
                405                 410                 415

Pro Leu Pro Gln Pro Ser Gln His Asn Pro Arg Ser Ser Tyr His Asn
            420                 425                 430

Ile Thr Asp Val Cys Glu Leu Ala Val Gly Pro Ala Gly Ala Pro Ala
        435                 440                 445

Thr Leu Leu Asn Glu Ala Gly Lys Asp Ala Leu Lys Ser Ser Gln Thr
    450                 455                 460

Ile Lys Ser Arg Glu Glu Gly Lys Ala Thr Gln Gln Arg Glu Val Glu
465                 470                 475                 480

Ser Phe His Ser Glu Thr Asp Gln Asp Thr Pro Trp Leu Leu Pro Gln
                485                 490                 495

Glu Lys Thr Pro Phe Gly Ser Ala Lys Pro Leu Asp Tyr Val Glu Ile
            500                 505                 510

His Lys Val Asn Lys Asp Gly Ala Leu Ser Leu Leu Pro Lys Gln Arg
        515                 520                 525

Glu Asn Ser Gly Lys Pro Lys Lys Pro Gly Thr Pro Glu Asn Asn Lys
    530                 535                 540

Glu Tyr Ala Lys Val Ser Gly Val Met Asp Asn Asn Ile Leu Val Leu
545                 550                 555                 560

Val Pro Asp Pro His Ala Lys Asn Val Ala Cys Phe Glu Glu Ser Ala
                565                 570                 575
```

```
Lys Glu Ala Pro Pro Ser Leu Glu Gln Asn Gln Ala Glu Lys Ala Leu
            580                 585                 590


Ala Asn Phe Thr Ala Thr Ser Ser Lys Cys Arg Leu Gln Leu Gly Gly
        595                 600                 605


Leu Asp Tyr Leu Asp Pro Ala Cys Phe Thr His Ser Phe His
    610                 615                 620


<210>  62
<211>  638
<212>  PRT
<213>  Homo sapiens

<400>  62

Met Asp Leu Trp Gln Leu Leu Leu Thr Leu Ala Leu Ala Gly Ser Ser
1               5                   10                  15


Asp Ala Phe Ser Gly Ser Glu Ala Thr Ala Ala Ile Leu Ser Arg Ala
            20                  25                  30


Pro Trp Ser Leu Gln Ser Val Asn Pro Gly Leu Lys Thr Asn Ser Ser
        35                  40                  45


Lys Glu Pro Lys Phe Thr Lys Cys Arg Ser Pro Glu Arg Glu Thr Phe
    50                  55                  60


Ser Cys His Trp Thr Asp Glu Val His His Gly Thr Lys Asn Leu Gly
65                  70                  75                  80


Pro Ile Gln Leu Phe Tyr Thr Arg Arg Asn Thr Gln Glu Trp Thr Gln
                85                  90                  95


Glu Trp Lys Glu Cys Pro Asp Tyr Val Ser Ala Gly Glu Asn Ser Cys
            100                 105                 110


Tyr Phe Asn Ser Ser Phe Thr Ser Ile Trp Ile Pro Tyr Cys Ile Lys
        115                 120                 125


Leu Thr Ser Asn Gly Gly Thr Val Asp Glu Lys Cys Phe Ser Val Asp
    130                 135                 140
```

```
Glu Ile Val Gln Pro Asp Pro Pro Ile Ala Leu Asn Trp Thr Leu Leu
145                 150                 155                 160

Asn Val Ser Leu Thr Gly Ile His Ala Asp Ile Gln Val Arg Trp Glu
                165                 170                 175

Ala Pro Arg Asn Ala Asp Ile Gln Lys Gly Trp Met Val Leu Glu Tyr
            180                 185                 190

Glu Leu Gln Tyr Lys Glu Val Asn Glu Thr Lys Trp Lys Met Met Asp
        195                 200                 205

Pro Ile Leu Thr Thr Ser Val Pro Val Tyr Ser Leu Lys Val Asp Lys
    210                 215                 220

Glu Tyr Glu Val Arg Val Arg Ser Lys Gln Arg Asn Ser Gly Asn Tyr
225                 230                 235                 240

Gly Glu Phe Ser Glu Val Leu Tyr Val Thr Leu Pro Gln Met Ser Gln
                245                 250                 255

Phe Thr Cys Glu Glu Asp Phe Tyr Phe Pro Trp Leu Leu Ile Ile Ile
            260                 265                 270

Phe Gly Ile Phe Gly Leu Thr Val Met Leu Phe Val Phe Leu Phe Ser
        275                 280                 285

Lys Gln Gln Arg Ile Lys Met Leu Ile Leu Pro Pro Val Pro Val Pro
    290                 295                 300

Lys Ile Lys Gly Ile Asp Pro Asp Leu Leu Lys Glu Gly Lys Leu Glu
305                 310                 315                 320

Glu Val Asn Thr Ile Leu Ala Ile His Asp Ser Tyr Lys Pro Glu Phe
                325                 330                 335

His Ser Asp Asp Ser Trp Val Glu Phe Ile Glu Leu Asp Ile Asp Glu
            340                 345                 350
```

```
Pro Asp Glu Lys Thr Glu Glu Ser Asp Thr Asp Arg Leu Leu Ser Ser
        355                 360                 365

Asp His Glu Lys Ser His Ser Asn Leu Gly Val Lys Asp Gly Asp Ser
    370                 375                 380

Gly Arg Thr Ser Cys Cys Glu Pro Asp Ile Leu Glu Thr Asp Phe Asn
385                 390                 395                 400

Ala Asn Asp Ile His Glu Gly Thr Ser Glu Val Ala Gln Pro Gln Arg
                405                 410                 415

Leu Lys Gly Glu Ala Asp Leu Leu Cys Leu Asp Gln Lys Asn Gln Asn
            420                 425                 430

Asn Ser Pro Tyr His Asp Ala Cys Pro Ala Thr Gln Gln Pro Ser Val
        435                 440                 445

Ile Gln Ala Glu Lys Asn Lys Pro Gln Pro Leu Pro Thr Glu Gly Ala
    450                 455                 460

Glu Ser Thr His Gln Ala Ala His Ile Gln Leu Ser Asn Pro Ser Ser
465                 470                 475                 480

Leu Ser Asn Ile Asp Phe Tyr Ala Gln Val Ser Asp Ile Thr Pro Ala
                485                 490                 495

Gly Ser Val Val Leu Ser Pro Gly Gln Lys Asn Lys Ala Gly Met Ser
            500                 505                 510

Gln Cys Asp Met His Pro Glu Met Val Ser Leu Cys Gln Glu Asn Phe
        515                 520                 525

Leu Met Asp Asn Ala Tyr Phe Cys Glu Ala Asp Ala Lys Lys Cys Ile
    530                 535                 540

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

Asn Gln Glu Asp Ile Tyr Ile Thr Thr Glu Ser Leu Thr Thr Ala Ala
                565                 570                 575
```

Gly Arg Pro Gly Thr Gly Glu His Val Pro Gly Ser Glu Met Pro Val
580 585 590

Pro Asp Tyr Thr Ser Ile His Ile Val Gln Ser Pro Gln Gly Leu Ile
595 600 605

Leu Asn Ala Thr Ala Leu Pro Leu Pro Asp Lys Glu Phe Leu Ser Ser
610 615 620

Cys Gly Tyr Val Ser Thr Asp Gln Leu Asn Lys Ile Met Pro
625 630 635

<210> 63
<211> 863
<212> PRT
<213> Homo sapiens

<400> 63

Met Ala Arg Leu Gly Asn Cys Ser Leu Thr Trp Ala Ala Leu Ile Ile
1 5 10 15

Leu Leu Leu Pro Gly Ser Leu Glu Glu Cys Gly His Ile Ser Val Ser
20 25 30

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

Lys Gln Asn Cys Ser His Leu Asp Pro Glu Pro Gln Ile Leu Trp Arg
50 55 60

Leu Gly Ala Glu Leu Gln Pro Gly Gly Arg Gln Gln Arg Leu Ser Asp
65 70 75 80

Gly Thr Gln Glu Ser Ile Ile Thr Leu Pro His Leu Asn His Thr Gln
85 90 95

Ala Phe Leu Ser Cys Cys Leu Asn Trp Gly Asn Ser Leu Gln Ile Leu
100 105 110

Asp Gln Val Glu Leu Arg Ala Gly Tyr Pro Pro Ala Ile Pro His Asn

```
        115                 120                 125

Leu Ser Cys Leu Met Asn Leu Thr Thr Ser Ser Leu Ile Cys Gln Trp
    130                 135                 140

Glu Pro Gly Pro Glu Thr His Leu Pro Thr Ser Phe Thr Leu Lys Ser
145                 150                 155                 160

Phe Lys Ser Arg Gly Asn Cys Gln Thr Gln Gly Asp Ser Ile Leu Asp
                165                 170                 175

Cys Val Pro Lys Asp Gly Gln Ser His Cys Cys Ile Pro Arg Lys His
            180                 185                 190

Leu Leu Leu Tyr Gln Asn Met Gly Ile Trp Val Gln Ala Glu Asn Ala
        195                 200                 205

Leu Gly Thr Ser Met Ser Pro Gln Leu Cys Leu Asp Pro Met Asp Val
    210                 215                 220

Val Lys Leu Glu Pro Pro Met Leu Arg Thr Met Asp Pro Ser Pro Glu
225                 230                 235                 240

Ala Ala Pro Pro Gln Ala Gly Cys Leu Gln Leu Cys Trp Glu Pro Trp
                245                 250                 255

Gln Pro Gly Leu His Ile Asn Gln Lys Cys Glu Leu Arg His Lys Pro
            260                 265                 270

Gln Arg Gly Glu Ala Ser Trp Ala Leu Val Gly Pro Leu Pro Leu Glu
        275                 280                 285

Ala Leu Gln Tyr Glu Leu Cys Gly Leu Leu Pro Ala Thr Ala Tyr Thr
    290                 295                 300

Leu Gln Ile Arg Cys Ile Arg Trp Pro Leu Pro Gly His Trp Ser Asp
305                 310                 315                 320

Trp Ser Pro Ser Leu Glu Leu Arg Thr Thr Glu Arg Ala Pro Thr Val
                325                 330                 335
```

```
Arg Leu Asp Thr Trp Trp Arg Gln Arg Gln Leu Asp Pro Arg Thr Val
            340                 345                 350

Gln Leu Phe Trp Lys Pro Val Pro Leu Glu Glu Asp Ser Gly Arg Ile
        355                 360                 365

Gln Gly Tyr Val Val Ser Trp Arg Pro Ser Gly Gln Ala Gly Ala Ile
    370                 375                 380

Leu Pro Leu Cys Asn Thr Thr Glu Leu Ser Cys Thr Phe His Leu Pro
385                 390                 395                 400

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

Ser Arg Pro Thr Pro Val Val Phe Ser Glu Ser Arg Gly Pro Ala Leu
            420                 425                 430

Thr Arg Leu His Ala Met Ala Arg Asp Pro His Ser Leu Trp Val Gly
        435                 440                 445

Trp Glu Pro Pro Asn Pro Trp Pro Gln Gly Tyr Val Ile Glu Trp Gly
    450                 455                 460

Leu Gly Pro Pro Ser Ala Ser Asn Ser Asn Lys Thr Trp Arg Met Glu
465                 470                 475                 480

Gln Asn Gly Arg Ala Thr Gly Phe Leu Leu Lys Glu Asn Ile Arg Pro
                485                 490                 495

Phe Gln Leu Tyr Glu Ile Ile Val Thr Pro Leu Tyr Gln Asp Thr Met
            500                 505                 510

Gly Pro Ser Gln His Val Tyr Ala Tyr Ser Gln Glu Met Ala Pro Ser
        515                 520                 525

His Ala Pro Glu Leu His Leu Lys His Ile Gly Lys Thr Trp Ala Gln
    530                 535                 540

Leu Glu Trp Val Pro Glu Pro Pro Glu Leu Gly Lys Ser Pro Leu Thr
```

```
545                 550                 555                 560

His Tyr Thr Ile Phe Trp Thr Asn Ala Gln Asn Gln Ser Phe Ser Ala
                565                 570                 575

Ile Leu Asn Ala Ser Ser Arg Gly Phe Val Leu His Gly Leu Glu Pro
            580                 585                 590

Ala Ser Leu Tyr His Ile His Leu Met Ala Ala Ser Gln Ala Gly Ala
        595                 600                 605

Thr Asn Ser Thr Val Leu Thr Leu Met Thr Leu Thr Pro Glu Gly Ser
    610                 615                 620

Glu Leu His Ile Ile Leu Gly Leu Phe Gly Leu Leu Leu Leu Leu Thr
625                 630                 635                 640

Cys Leu Cys Gly Thr Ala Trp Leu Cys Cys Ser Pro Asn Arg Lys Asn
                645                 650                 655

Pro Leu Trp Pro Ser Val Pro Asp Pro Ala His Ser Ser Leu Gly Ser
            660                 665                 670

Trp Val Pro Thr Ile Met Glu Glu Leu Pro Gly Pro Arg Gln Gly Gln
        675                 680                 685

Trp Leu Gly Gln Thr Ser Glu Met Ser Arg Ala Leu Thr Pro His Pro
    690                 695                 700

Cys Val Gln Asp Ala Phe Gln Leu Pro Gly Leu Gly Thr Pro Pro Ile
705                 710                 715                 720

Thr Lys Leu Thr Val Leu Glu Glu Asp Glu Lys Lys Pro Val Pro Trp
                725                 730                 735

Glu Ser His Asn Ser Ser Glu Thr Cys Gly Leu Pro Thr Leu Val Gln
            740                 745                 750

Thr Tyr Val Leu Gln Gly Asp Pro Arg Ala Val Ser Thr Gln Pro Gln
        755                 760                 765
```

```
Ser Gln Ser Gly Thr Ser Asp Gln Val Leu Tyr Gly Gln Leu Leu Gly
    770                 775                 780

Ser Pro Thr Ser Pro Gly Pro Gly His Tyr Leu Arg Cys Asp Ser Thr
785                 790                 795                 800

Gln Pro Leu Leu Ala Gly Leu Thr Pro Ser Pro Lys Ser Tyr Glu Asn
                805                 810                 815

Leu Trp Phe Gln Ala Ser Pro Leu Gly Thr Leu Val Thr Pro Ala Pro
            820                 825                 830

Ser Gln Glu Asp Asp Cys Val Phe Gly Pro Leu Leu Asn Phe Pro Leu
        835                 840                 845

Leu Gln Gly Ile Arg Val His Gly Met Glu Ala Leu Gly Ser Phe
    850                 855                 860
```

<210> 64
<211> 635
<212> PRT
<213> Homo sapiens

<400> 64

```
Met Pro Ser Trp Ala Leu Phe Met Val Thr Ser Cys Leu Leu Leu Ala
1               5                   10                  15

Pro Gln Asn Leu Ala Gln Val Ser Ser Gln Asp Val Ser Leu Leu Ala
            20                  25                  30

Ser Asp Ser Glu Pro Leu Lys Cys Phe Ser Arg Thr Phe Glu Asp Leu
        35                  40                  45

Thr Cys Phe Trp Asp Glu Glu Glu Ala Ala Pro Ser Gly Thr Tyr Gln
    50                  55                  60

Leu Leu Tyr Ala Tyr Pro Arg Glu Lys Pro Arg Ala Cys Pro Leu Ser
65                  70                  75                  80

Ser Gln Ser Met Pro His Phe Gly Thr Arg Tyr Val Cys Gln Phe Pro
                85                  90                  95
```

```
Asp Gln Glu Glu Val Arg Leu Phe Phe Pro Leu His Leu Trp Val Lys
            100                 105                 110

Asn Val Phe Leu Asn Gln Thr Arg Thr Gln Arg Val Leu Phe Val Asp
        115                 120                 125

Ser Val Gly Leu Pro Ala Pro Pro Ser Ile Ile Lys Ala Met Gly Gly
    130                 135                 140

Ser Gln Pro Gly Glu Leu Gln Ile Ser Trp Glu Glu Pro Ala Pro Glu
145                 150                 155                 160

Ile Ser Asp Phe Leu Arg Tyr Glu Leu Arg Tyr Gly Pro Arg Asp Pro
                165                 170                 175

Lys Asn Ser Thr Gly Pro Thr Val Ile Gln Leu Ile Ala Thr Glu Thr
            180                 185                 190

Cys Cys Pro Ala Leu Gln Arg Pro His Ser Ala Ser Ala Leu Asp Gln
        195                 200                 205

Ser Pro Cys Ala Gln Pro Thr Met Pro Trp Gln Asp Gly Pro Lys Gln
    210                 215                 220

Thr Ser Pro Ser Arg Glu Ala Ser Ala Leu Thr Ala Glu Gly Gly Ser
225                 230                 235                 240

Cys Leu Ile Ser Gly Leu Gln Pro Gly Asn Ser Tyr Trp Leu Gln Leu
                245                 250                 255

Arg Ser Glu Pro Asp Gly Ile Ser Leu Gly Gly Ser Trp Gly Ser Trp
            260                 265                 270

Ser Leu Pro Val Thr Val Asp Leu Pro Gly Asp Ala Val Ala Leu Gly
        275                 280                 285

Leu Gln Cys Phe Thr Leu Asp Leu Lys Asn Val Thr Cys Gln Trp Gln
    290                 295                 300
```

```
Gln Gln Asp His Ala Ser Ser Gln Gly Phe Phe Tyr His Ser Arg Ala
305                 310                 315                 320

Arg Cys Cys Pro Arg Asp Arg Tyr Pro Ile Trp Glu Asn Cys Glu Glu
                325                 330                 335

Glu Glu Lys Thr Asn Pro Gly Leu Gln Thr Pro Gln Phe Ser Arg Cys
            340                 345                 350

His Phe Lys Ser Arg Asn Asp Ser Ile Ile His Ile Leu Val Glu Val
        355                 360                 365

Thr Thr Ala Pro Gly Thr Val His Ser Tyr Leu Gly Ser Pro Phe Trp
    370                 375                 380

Ile His Gln Ala Val Arg Leu Pro Thr Pro Asn Leu His Trp Arg Glu
385                 390                 395                 400

Ile Ser Ser Gly His Leu Glu Leu Glu Trp Gln His Pro Ser Ser Trp
                405                 410                 415

Ala Ala Gln Glu Thr Cys Tyr Gln Leu Arg Tyr Thr Gly Glu Gly His
            420                 425                 430

Gln Asp Trp Lys Val Leu Glu Pro Pro Leu Gly Ala Arg Gly Gly Thr
        435                 440                 445

Leu Glu Leu Arg Pro Arg Ser Arg Tyr Arg Leu Gln Leu Arg Ala Arg
    450                 455                 460

Leu Asn Gly Pro Thr Tyr Gln Gly Pro Trp Ser Ser Trp Ser Asp Pro
465                 470                 475                 480

Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile Ser Leu Val Thr
                485                 490                 495

Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu
            500                 505                 510

Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu
        515                 520                 525
```

Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg
530 535 540

Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys
545 550 555 560

Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu
565 570 575

Arg Thr Pro Leu Pro Leu Cys Ser Ser Gln Ala Gln Met Asp Tyr Arg
580 585 590

Arg Leu Gln Pro Ser Cys Leu Gly Thr Met Pro Leu Ser Val Cys Pro
595 600 605

Pro Met Ala Glu Ser Gly Ser Cys Cys Thr Thr His Ile Ala Asn His
610 615 620

Ser Tyr Leu Pro Leu Ser Tyr Trp Gln Gln Pro
625 630 635

<210> 65
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 signal peptide

<400> 65

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro
20

<210> 66
<211> 14
<212> PRT
<213> Artificial Sequence

<220>

<223> Myristoylation Motif

<400> 66

Met Gly Ser Ser Lys Ser Lys Pro Lys Asp Pro Ser Gln Arg
1 5 10

<210> 67
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Myc epitope tag

<400> 67

Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu
1 5 10

<210> 68
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> V5 epitope tag

<400> 68

Ile Pro Asn Pro Leu Leu Gly Leu Asp Ser Thr
1 5 10

<210> 69
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> FKBP(F36V) dimerization domain

<400> 69

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1 5 10 15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
20 25 30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35   40   45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50   55   60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65   70   75   80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85   90   95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu
            100   105

<210> 70
<211> 214
<212> PRT
<213> Artificial Sequence

<220>
<223> FKBP(F36V)-FKBP(F36V) dimerization domain

<400> 70

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1   5   10   15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20   25   30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35   40   45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50   55   60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65   70   75   80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85   90   95

```
Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Gly Val Gln Val Glu
            100                 105                 110


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


Cys Val Val His Tyr Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp
    130                 135                 140


Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln
145                 150                 155                 160


Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly
                165                 170                 175


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


Gly His Pro Gly Ile Ile Pro Pro His Ala Thr Leu Val Phe Asp Val
        195                 200                 205


Glu Leu Leu Lys Leu Glu
    210


<210>  71
<211>  107
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  FKBP(F36V,L106P) dimerization domain

<400>  71

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                   10                  15


Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30


Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45
```

```
Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60


Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80


Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95


Thr Leu Val Phe Asp Val Glu Leu Leu Lys Pro
            100                 105


<210>  72
<211>  213
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  FKBP(F36V,L106P)-FKBP(F36V,L106P) dimerization domain

<400>  72

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                   10                  15


Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30


Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45


Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60


Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80


Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95


Thr Leu Val Phe Asp Val Glu Leu Leu Lys Pro Gly Val Gln Val Glu
            100                 105                 110
```

```
Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr
        115                 120                 125


Cys Val Val His Tyr Thr Gly Met Leu Glu Asp Lys Lys Val Asp Ser
    130                 135                 140


Ser Arg Asp Arg Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu
145                 150                 155                 160


Val Ile Arg Gly Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln
                165                 170                 175


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


His Pro Gly Ile Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu
        195                 200                 205


Leu Leu Lys Pro Glu
    210


<210>  73
<211>  214
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  FKBP(E31G,36V,R71G,K105E)-FKBP(E31G,36V,R71G,K105E) dimerization domain

<400>  73

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                   10                  15


Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Gly
            20                  25                  30


Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45


Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60
```

```
Ala Gln Met Ser Val Gly Gln Gly Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95

Thr Leu Val Phe Asp Val Glu Leu Leu Glu Leu Gly Val Gln Val Glu
            100                 105                 110

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

Cys Val Val His Tyr Thr Gly Met Leu Gly Asp Gly Lys Lys Val Asp
    130                 135                 140

Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln
145                 150                 155                 160

Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly
                165                 170                 175

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

Gly His Pro Gly Ile Ile Pro Pro His Ala Thr Leu Val Phe Asp Val
        195                 200                 205

Glu Leu Leu Glu Leu Glu
    210
```

<210> 74
<211> 126
<212> PRT
<213> Artificial Sequence

<220>
<223> ALK5/TGFBR1(1-126) dimerization domain

<400> 74

```
Met Glu Ala Ala Val Ala Ala Pro Arg Pro Arg Leu Leu Leu Leu Val
1               5                   10                  15
```

```
Leu Ala Ala Ala Ala Ala Ala Ala Ala Ala Leu Leu Pro Gly Ala Thr
            20                  25                  30

Ala Leu Gln Cys Phe Cys His Leu Cys Thr Lys Asp Asn Phe Thr Cys
        35                  40                  45

Val Thr Asp Gly Leu Cys Phe Val Ser Val Thr Glu Thr Thr Asp Lys
    50                  55                  60

Val Ile His Asn Ser Met Cys Ile Ala Glu Ile Asp Leu Ile Pro Arg
65                  70                  75                  80

Asp Arg Pro Phe Val Cys Ala Pro Ser Ser Lys Thr Gly Ser Val Thr
                85                  90                  95

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

Thr Thr Val Lys Ser Ser Pro Gly Leu Gly Pro Val Glu Leu
        115                 120                 125
```

<210> 75
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> TGFBR2(1-166) dimerization domain

<400> 75

```
Met Gly Arg Gly Leu Leu Arg Gly Leu Trp Pro Leu His Ile Val Leu
1               5                   10                  15

Trp Thr Arg Ile Ala Ser Thr Ile Pro Pro His Val Gln Lys Ser Val
            20                  25                  30

Asn Asn Asp Met Ile Val Thr Asp Asn Asn Gly Ala Val Lys Phe Pro
        35                  40                  45

Gln Leu Cys Lys Phe Cys Asp Val Arg Phe Ser Thr Cys Asp Asn Gln
    50                  55                  60
```

```
Lys Ser Cys Met Ser Asn Cys Ser Ile Thr Ser Ile Cys Glu Lys Pro
65                  70                  75                  80


Gln Glu Val Cys Val Ala Val Trp Arg Lys Asn Asp Glu Asn Ile Thr
                85                  90                  95


Leu Glu Thr Val Cys His Asp Pro Lys Leu Pro Tyr His Asp Phe Ile
            100                 105                 110


Leu Glu Asp Ala Ala Ser Pro Lys Cys Ile Met Lys Glu Lys Lys Lys
        115                 120                 125


Pro Gly Glu Thr Phe Phe Met Cys Ser Cys Ser Ser Asp Glu Cys Asn
    130                 135                 140


Asp Asn Ile Ile Phe Ser Glu Glu Tyr Asn Thr Ser Asn Pro Asp Leu
145                 150                 155                 160


Leu Leu Val Ile Phe Gln
                165


<210>  76
<211>  236
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  EpoR(1-236) dimerization domain

<400>  76

Met Asp His Leu Gly Ala Ser Leu Trp Pro Gln Val Gly Ser Leu Cys
1               5                   10                  15


Leu Leu Leu Ala Gly Ala Ala Trp Ala Pro Pro Pro Asn Leu Pro Asp
            20                  25                  30


Pro Lys Phe Glu Ser Lys Ala Ala Leu Leu Ala Ala Arg Gly Pro Glu
        35                  40                  45


Glu Leu Leu Cys Phe Thr Glu Arg Leu Glu Asp Leu Val Cys Phe Trp
    50                  55                  60
```

```
Glu Glu Ala Ala Ser Ala Gly Val Gly Pro Gly Asn Tyr Ser Phe Ser
65                  70                  75                  80

Tyr Gln Leu Glu Asp Glu Pro Trp Lys Leu Cys Arg Leu His Gln Ala
                85                  90                  95

Pro Thr Ala Arg Gly Ala Val Arg Phe Trp Cys Ser Leu Pro Thr Ala
            100                 105                 110

Asp Thr Ser Ser Phe Val Pro Leu Glu Leu Arg Val Thr Ala Ala Ser
        115                 120                 125

Gly Ala Pro Arg Tyr His Arg Val Ile His Ile Asn Glu Val Val Leu
    130                 135                 140

Leu Asp Ala Pro Val Gly Leu Val Ala Arg Leu Ala Asp Glu Ser Gly
145                 150                 155                 160

His Val Val Leu Arg Trp Leu Pro Pro Pro Glu Thr Pro Met Thr Ser
                165                 170                 175

His Ile Arg Tyr Glu Val Asp Val Ser Ala Gly Asn Gly Ala Gly Ser
            180                 185                 190

Val Gln Arg Val Glu Ile Leu Glu Gly Arg Thr Glu Cys Val Leu Ser
        195                 200                 205

Asn Leu Arg Gly Arg Thr Arg Tyr Thr Phe Ala Val Arg Ala Arg Met
    210                 215                 220

Ala Glu Pro Ser Phe Gly Gly Phe Trp Ser Ala Trp
225                 230                 235
```

<210> 77
<211> 220
<212> PRT
<213> Artificial Sequence

<220>
<223> PrlR(1-220) dimerization domain

<400> 77

```
Met Lys Glu Asn Val Ala Ser Ala Thr Val Phe Thr Leu Leu Leu Phe
1               5                   10                  15

Leu Asn Thr Cys Leu Leu Asn Gly Gln Leu Pro Pro Gly Lys Pro Glu
            20                  25                  30

Ile Phe Lys Cys Arg Ser Pro Asn Lys Glu Thr Phe Thr Cys Trp Trp
        35                  40                  45

Arg Pro Gly Thr Asp Gly Gly Leu Pro Thr Asn Tyr Ser Leu Thr Tyr
    50                  55                  60

His Arg Glu Gly Glu Thr Leu Met His Glu Cys Pro Asp Tyr Ile Thr
65                  70                  75                  80

Gly Gly Pro Asn Ser Cys His Phe Gly Lys Gln Tyr Thr Ser Met Trp
                85                  90                  95

Arg Thr Tyr Ile Met Met Val Asn Ala Thr Asn Gln Met Gly Ser Ser
            100                 105                 110

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

Pro Pro Leu Glu Leu Ala Val Glu Val Lys Gln Pro Glu Asp Arg Lys
    130                 135                 140

Pro Tyr Leu Trp Ile Lys Trp Ser Pro Pro Thr Leu Ile Asp Leu Lys
145                 150                 155                 160

Thr Gly Trp Phe Thr Leu Leu Tyr Glu Ile Arg Leu Lys Pro Glu Lys
                165                 170                 175

Ala Ala Glu Trp Glu Ile His Phe Ala Gly Gln Gln Thr Glu Phe Lys
            180                 185                 190

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

Lys Pro Asp His Gly Tyr Trp Ser Ala Trp Ser Pro
    210                 215                 220
```

<210> 78
<211> 250
<212> PRT
<213> Artificial Sequence

<220>
<223> GHR(1-250) dimerization domain

<400> 78

```
Met Asp Leu Trp Gln Leu Leu Leu Thr Leu Ala Leu Ala Gly Ser Ser
1               5                   10                  15


Asp Ala Phe Ser Gly Ser Glu Ala Thr Ala Ala Ile Leu Ser Arg Ala
            20                  25                  30


Pro Trp Ser Leu Gln Ser Val Asn Pro Gly Leu Lys Thr Asn Ser Ser
        35                  40                  45


Lys Glu Pro Lys Phe Thr Lys Cys Arg Ser Pro Glu Arg Glu Thr Phe
    50                  55                  60


Ser Cys His Trp Thr Asp Glu Val His His Gly Thr Lys Asn Leu Gly
65                  70                  75                  80


Pro Ile Gln Leu Phe Tyr Thr Arg Arg Asn Thr Gln Glu Trp Thr Gln
                85                  90                  95


Glu Trp Lys Glu Cys Pro Asp Tyr Val Ser Ala Gly Glu Asn Ser Cys
            100                 105                 110


Tyr Phe Asn Ser Ser Phe Thr Ser Ile Trp Ile Pro Tyr Cys Ile Lys
        115                 120                 125


Leu Thr Ser Asn Gly Gly Thr Val Asp Glu Lys Cys Phe Ser Val Asp
    130                 135                 140


Glu Ile Val Gln Pro Asp Pro Pro Ile Ala Leu Asn Trp Thr Leu Leu
145                 150                 155                 160


Asn Val Ser Leu Thr Gly Ile His Ala Asp Ile Gln Val Arg Trp Glu
                165                 170                 175
```

```
Ala Pro Arg Asn Ala Asp Ile Gln Lys Gly Trp Met Val Leu Glu Tyr
            180                 185                 190

Glu Leu Gln Tyr Lys Glu Val Asn Glu Thr Lys Trp Lys Met Met Asp
        195                 200                 205

Pro Ile Leu Thr Thr Ser Val Pro Val Tyr Ser Leu Lys Val Asp Lys
    210                 215                 220

Glu Tyr Glu Val Arg Val Arg Ser Lys Gln Arg Asn Ser Gly Asn Tyr
225                 230                 235                 240

Gly Glu Phe Ser Glu Val Leu Tyr Val Thr
                245                 250
```

<210> 79
<211> 477
<212> PRT
<213> Artificial Sequence

<220>
<223> TPOR/MPLR(1-478) dimerization domain

<400> 79

```
Met Pro Ser Trp Ala Leu Phe Met Val Thr Ser Cys Leu Leu Leu Ala
1               5                   10                  15

Pro Gln Asn Leu Ala Gln Val Ser Ser Gln Asp Val Ser Leu Leu Ala
            20                  25                  30

Ser Asp Ser Glu Pro Leu Lys Cys Phe Ser Arg Thr Phe Glu Asp Leu
        35                  40                  45

Thr Cys Phe Trp Asp Glu Glu Glu Ala Ala Pro Ser Gly Thr Tyr Gln
    50                  55                  60

Leu Leu Tyr Ala Tyr Pro Arg Glu Lys Pro Arg Ala Cys Pro Leu Ser
65                  70                  75                  80

Ser Gln Ser Met Pro His Phe Gly Thr Arg Tyr Val Cys Gln Phe Pro
                85                  90                  95
```

```
Asp Gln Glu Glu Val Arg Leu Phe Phe Pro Leu His Leu Trp Val Lys
            100                 105                 110

Asn Val Phe Leu Asn Gln Thr Arg Thr Gln Arg Val Leu Phe Val Asp
        115                 120                 125

Ser Val Gly Leu Pro Ala Pro Pro Ser Ile Ile Lys Ala Met Gly Gly
    130                 135                 140

Ser Gln Pro Gly Glu Leu Gln Ile Ser Trp Glu Glu Pro Ala Pro Glu
145                 150                 155                 160

Ile Ser Asp Phe Leu Arg Tyr Glu Leu Arg Tyr Gly Pro Arg Asp Pro
                165                 170                 175

Lys Asn Ser Thr Gly Pro Thr Val Ile Gln Leu Ile Ala Thr Glu Thr
            180                 185                 190

Cys Cys Pro Ala Leu Gln Arg Pro His Ser Ala Ser Ala Leu Asp Gln
        195                 200                 205

Ser Pro Cys Ala Gln Pro Thr Met Pro Trp Gln Asp Gly Pro Lys Gln
    210                 215                 220

Thr Ser Pro Ser Arg Glu Ala Ser Ala Leu Thr Ala Glu Gly Gly Ser
225                 230                 235                 240

Cys Leu Ile Ser Gly Leu Gln Pro Gly Asn Ser Tyr Trp Leu Gln Leu
                245                 250                 255

Arg Ser Glu Pro Asp Gly Ile Ser Leu Gly Gly Ser Trp Gly Ser Trp
            260                 265                 270

Ser Leu Pro Val Thr Val Asp Leu Pro Gly Asp Ala Val Ala Leu Gly
        275                 280                 285

Leu Gln Cys Phe Thr Leu Asp Leu Lys Asn Val Thr Cys Gln Trp Gln
    290                 295                 300
```

```
Gln Gln Asp His Ala Ser Ser Gln Gly Phe Phe Tyr His Ser Arg Ala
305                 310                 315                 320


Arg Cys Cys Pro Arg Asp Arg Tyr Pro Ile Trp Glu Asn Cys Glu Glu
                325                 330                 335


Glu Glu Lys Thr Asn Pro Gly Leu Gln Thr Pro Gln Phe Ser Arg Cys
            340                 345                 350


His Phe Lys Ser Arg Asn Asp Ser Ile Ile His Ile Leu Val Glu Val
        355                 360                 365


Thr Thr Ala Pro Gly Thr Val His Ser Tyr Leu Gly Ser Pro Phe Trp
    370                 375                 380


Ile His Gln Ala Val Arg Leu Pro Thr Pro Asn Leu His Trp Arg Glu
385                 390                 395                 400


Ile Ser Ser Gly His Leu Glu Leu Glu Trp Gln His Pro Ser Ser Trp
                405                 410                 415


Ala Ala Gln Glu Thr Cys Tyr Gln Leu Arg Tyr Thr Gly Glu Gly His
            420                 425                 430


Gln Asp Trp Lys Val Leu Glu Pro Pro Leu Gly Ala Arg Gly Gly Thr
        435                 440                 445


Leu Glu Leu Arg Pro Arg Ser Arg Tyr Arg Leu Gln Leu Arg Ala Arg
    450                 455                 460


Leu Asn Gly Pro Thr Tyr Gln Gly Pro Trp Ser Ser Trp
465                 470                 475


<210>  80
<211>  631
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  EGFR(1-631) dimerization domain

<400>  80
```

```
Met Arg Pro Ser Gly Thr Ala Gly Ala Ala Leu Leu Ala Leu Leu Ala
1               5                  10                  15

Ala Leu Cys Pro Ala Ser Arg Ala Leu Glu Glu Lys Lys Val Cys Gln
            20                  25                  30

Gly Thr Ser Asn Lys Leu Thr Gln Leu Gly Thr Phe Glu Asp His Phe
        35                  40                  45

Leu Ser Leu Gln Arg Met Phe Asn Asn Cys Glu Val Val Leu Gly Asn
    50                  55                  60

Leu Glu Ile Thr Tyr Val Gln Arg Asn Tyr Asp Leu Ser Phe Leu Lys
65                  70                  75                  80

Thr Ile Gln Glu Val Ala Gly Tyr Val Leu Ile Ala Leu Asn Thr Val
                85                  90                  95

Glu Arg Ile Pro Leu Glu Asn Leu Gln Ile Ile Arg Gly Asn Met Tyr
            100                 105                 110

Tyr Glu Asn Ser Tyr Ala Leu Ala Val Leu Ser Asn Tyr Asp Ala Asn
        115                 120                 125

Lys Thr Gly Leu Lys Glu Leu Pro Met Arg Asn Leu Gln Glu Ile Leu
    130                 135                 140

His Gly Ala Val Arg Phe Ser Asn Asn Pro Ala Leu Cys Asn Val Glu
145                 150                 155                 160

Ser Ile Gln Trp Arg Asp Ile Val Ser Ser Asp Phe Leu Ser Asn Met
                165                 170                 175

Ser Met Asp Phe Gln Asn His Leu Gly Ser Cys Gln Lys Cys Asp Pro
            180                 185                 190

Ser Cys Pro Asn Gly Ser Cys Trp Gly Ala Gly Glu Glu Asn Cys Gln
        195                 200                 205

Lys Leu Thr Lys Ile Ile Cys Ala Gln Gln Cys Ser Gly Arg Cys Arg
    210                 215                 220
```

```
Gly Lys Ser Pro Ser Asp Cys Cys His Asn Gln Cys Ala Ala Gly Cys
225                 230                 235                 240

Thr Gly Pro Arg Glu Ser Asp Cys Leu Val Cys Arg Lys Phe Arg Asp
                245                 250                 255

Glu Ala Thr Cys Lys Asp Thr Cys Pro Pro Leu Met Leu Tyr Asn Pro
            260                 265                 270

Thr Thr Tyr Gln Met Asp Val Asn Pro Glu Gly Lys Tyr Ser Phe Gly
        275                 280                 285

Ala Thr Cys Val Lys Lys Cys Pro Arg Asn Tyr Val Val Thr Asp His
    290                 295                 300

Gly Ser Cys Val Arg Ala Cys Gly Ala Asp Ser Tyr Glu Met Glu Glu
305                 310                 315                 320

Asp Gly Val Arg Lys Cys Lys Lys Cys Glu Gly Pro Cys Arg Lys Val
                325                 330                 335

Cys Asn Gly Ile Gly Ile Gly Glu Phe Lys Asp Ser Leu Ser Ile Asn
            340                 345                 350

Ala Thr Asn Ile Lys His Phe Lys Asn Cys Thr Ser Ile Ser Gly Asp
        355                 360                 365

Leu His Ile Leu Pro Val Ala Phe Arg Gly Asp Ser Phe Thr His Thr
    370                 375                 380

Pro Pro Leu Asp Pro Gln Glu Leu Asp Ile Leu Lys Thr Val Lys Glu
385                 390                 395                 400

Ile Thr Gly Phe Leu Leu Ile Gln Ala Trp Pro Glu Asn Arg Thr Asp
                405                 410                 415

Leu His Ala Phe Glu Asn Leu Glu Ile Ile Arg Gly Arg Thr Lys Gln
            420                 425                 430
```

```
His Gly Gln Phe Ser Leu Ala Val Val Ser Leu Asn Ile Thr Ser Leu
        435                 440                 445

Gly Leu Arg Ser Leu Lys Glu Ile Ser Asp Gly Asp Val Ile Ile Ser
    450                 455                 460

Gly Asn Lys Asn Leu Cys Tyr Ala Asn Thr Ile Asn Trp Lys Lys Leu
465                 470                 475                 480

Phe Gly Thr Ser Gly Gln Lys Thr Lys Ile Ile Ser Asn Arg Gly Glu
                485                 490                 495

Asn Ser Cys Lys Ala Thr Gly Gln Val Cys His Ala Leu Cys Ser Pro
            500                 505                 510

Glu Gly Cys Trp Gly Pro Glu Pro Arg Asp Cys Val Ser Cys Arg Asn
        515                 520                 525

Val Ser Arg Gly Arg Glu Cys Val Asp Lys Cys Asn Leu Leu Glu Gly
    530                 535                 540

Glu Pro Arg Glu Phe Val Glu Asn Ser Glu Cys Ile Gln Cys His Pro
545                 550                 555                 560

Glu Cys Leu Pro Gln Ala Met Asn Ile Thr Cys Thr Gly Arg Gly Pro
                565                 570                 575

Asp Asn Cys Ile Gln Cys Ala His Tyr Ile Asp Gly Pro His Cys Val
            580                 585                 590

Lys Thr Cys Pro Ala Gly Val Met Gly Glu Asn Asn Thr Leu Val Trp
        595                 600                 605

Lys Tyr Ala Asp Ala Gly His Val Cys His Leu Cys His Pro Asn Cys
    610                 615                 620

Thr Tyr Gly Cys Thr Gly Pro
625                 630
```

<210> 81
<211> 362

<212> PRT
<213> Artificial Sequence

<220>
<223> FGFR1(1-362) dimerization domain

<400> 81

```
Met Trp Ser Trp Lys Cys Leu Leu Phe Trp Ala Val Leu Val Thr Ala
1               5                  10                  15


Thr Leu Cys Thr Ala Arg Pro Ser Pro Thr Leu Pro Glu Gln Ala Gln
            20                  25                  30


Pro Trp Gly Ala Pro Val Glu Val Glu Ser Phe Leu Val His Pro Gly
        35                  40                  45


Asp Leu Leu Gln Leu Arg Cys Arg Leu Arg Asp Asp Val Gln Ser Ile
    50                  55                  60


Asn Trp Leu Arg Asp Gly Val Gln Leu Ala Glu Ser Asn Arg Thr Arg
65                  70                  75                  80


Ile Thr Gly Glu Glu Val Glu Val Gln Asp Ser Val Pro Ala Asp Ser
                85                  90                  95


Gly Leu Tyr Ala Cys Val Thr Ser Ser Pro Ser Gly Ser Asp Thr Thr
            100                 105                 110


Tyr Phe Ser Val Asn Val Ser Asp Ala Leu Pro Ser Ser Glu Asp Asp
        115                 120                 125


Asp Asp Asp Asp Asp Ser Ser Ser Glu Glu Lys Glu Thr Asp Asn Thr
    130                 135                 140


Lys Pro Asn Arg Met Pro Val Ala Pro Tyr Trp Thr Ser Pro Glu Lys
145                 150                 155                 160


Met Glu Lys Lys Leu His Ala Val Pro Ala Ala Lys Thr Val Lys Phe
                165                 170                 175


Lys Cys Pro Ser Ser Gly Thr Pro Asn Pro Thr Leu Arg Trp Leu Lys
            180                 185                 190
```

```
Asn Gly Lys Glu Phe Lys Pro Asp His Arg Ile Gly Gly Tyr Lys Val
        195                 200                 205

Arg Tyr Ala Thr Trp Ser Ile Ile Met Asp Ser Val Val Pro Ser Asp
    210                 215                 220

Lys Gly Asn Tyr Thr Cys Ile Val Glu Asn Glu Tyr Gly Ser Ile Asn
225                 230                 235                 240

His Thr Tyr Gln Leu Asp Val Val Glu Arg Ser Pro His Arg Pro Ile
                245                 250                 255

Leu Gln Ala Gly Leu Pro Ala Asn Lys Thr Val Ala Leu Gly Ser Asn
            260                 265                 270

Val Glu Phe Met Cys Lys Val Tyr Ser Asp Pro Gln Pro His Ile Gln
        275                 280                 285

Trp Leu Lys His Ile Glu Val Asn Gly Ser Lys Ile Gly Pro Asp Asn
    290                 295                 300

Leu Pro Tyr Val Gln Ile Leu Lys Thr Ala Gly Val Asn Thr Thr Asp
305                 310                 315                 320

Lys Glu Met Glu Val Leu His Leu Arg Asn Val Ser Phe Glu Asp Ala
                325                 330                 335

Gly Glu Tyr Thr Cys Leu Ala Gly Asn Ser Ile Gly Leu Ser His His
            340                 345                 350

Ser Ala Trp Leu Thr Val Leu Glu Ala Leu
        355                 360
```

<210> 82
<211> 514
<212> PRT
<213> Artificial Sequence

<220>
<223> PDGFRA(1-514) dimerization domain

<400> 82

```
Met Gly Thr Ser His Pro Ala Phe Leu Val Leu Gly Cys Leu Leu Thr
1               5                  10                  15

Gly Leu Ser Leu Ile Leu Cys Gln Leu Ser Leu Pro Ser Ile Leu Pro
            20                  25                  30

Asn Glu Asn Glu Lys Val Val Gln Leu Asn Ser Ser Phe Ser Leu Arg
        35                  40                  45

Cys Phe Gly Glu Ser Glu Val Ser Trp Gln Tyr Pro Met Ser Glu Glu
    50                  55                  60

Glu Ser Ser Asp Val Glu Ile Arg Asn Glu Glu Asn Asn Ser Gly Leu
65                  70                  75                  80

Phe Val Thr Val Leu Glu Val Ser Ser Ala Ser Ala Ala His Thr Gly
                85                  90                  95

Leu Tyr Thr Cys Tyr Tyr Asn His Thr Gln Thr Glu Glu Asn Glu Leu
            100                 105                 110

Glu Gly Arg His Ile Tyr Ile Tyr Val Pro Asp Pro Asp Val Ala Phe
        115                 120                 125

Val Pro Leu Gly Met Thr Asp Tyr Leu Val Ile Val Glu Asp Asp Asp
    130                 135                 140

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

Leu His Asn Ser Glu Gly Val Val Pro Ala Ser Tyr Asp Ser Arg Gln
                165                 170                 175

Gly Phe Asn Gly Thr Phe Thr Val Gly Pro Tyr Ile Cys Glu Ala Thr
            180                 185                 190

Val Lys Gly Lys Lys Phe Gln Thr Ile Pro Phe Asn Val Tyr Ala Leu
        195                 200                 205
```

```
Lys Ala Thr Ser Glu Leu Asp Leu Glu Met Glu Ala Leu Lys Thr Val
    210                 215                 220

Tyr Lys Ser Gly Glu Thr Ile Val Val Thr Cys Ala Val Phe Asn Asn
225                 230                 235                 240

Glu Val Val Asp Leu Gln Trp Thr Tyr Pro Gly Glu Val Lys Gly Lys
                245                 250                 255

Gly Ile Thr Met Leu Glu Glu Ile Lys Val Pro Ser Ile Lys Leu Val
            260                 265                 270

Tyr Thr Leu Thr Val Pro Glu Ala Thr Val Lys Asp Ser Gly Asp Tyr
        275                 280                 285

Glu Cys Ala Ala Arg Gln Ala Thr Arg Glu Val Lys Glu Met Lys Lys
    290                 295                 300

Val Thr Ile Ser Val His Glu Lys Gly Phe Ile Glu Ile Lys Pro Thr
305                 310                 315                 320

Phe Ser Gln Leu Glu Ala Val Asn Leu His Glu Val Lys His Phe Val
                325                 330                 335

Val Glu Val Arg Ala Tyr Pro Pro Pro Arg Ile Ser Trp Leu Lys Asn
            340                 345                 350

Asn Leu Thr Leu Ile Glu Asn Leu Thr Glu Ile Thr Thr Asp Val Glu
        355                 360                 365

Lys Ile Gln Glu Ile Arg Tyr Arg Ser Lys Leu Lys Leu Ile Arg Ala
    370                 375                 380

Lys Glu Glu Asp Ser Gly His Tyr Thr Ile Val Ala Gln Asn Glu Asp
385                 390                 395                 400

Ala Val Lys Ser Tyr Thr Phe Glu Leu Leu Thr Gln Val Pro Ser Ser
                405                 410                 415

Ile Leu Asp Leu Val Asp Asp His His Gly Ser Thr Gly Gly Gln Thr
            420                 425                 430
```

Val Arg Cys Thr Ala Glu Gly Thr Pro Leu Pro Asp Ile Glu Trp Met
        435   440   445

Ile Cys Lys Asp Ile Lys Lys Cys Asn Asn Glu Thr Ser Trp Thr Ile
    450   455   460

Leu Ala Asn Asn Val Ser Asn Ile Ile Thr Glu Ile His Ser Arg Asp
465   470   475   480

Arg Ser Thr Val Glu Gly Arg Val Thr Phe Ala Lys Val Glu Glu Thr
                485   490   495

Ile Ala Val Arg Cys Leu Ala Lys Asn Leu Leu Gly Ala Glu Asn Arg
            500   505   510

Glu Leu

<210> 83
<211> 518
<212> PRT
<213> Artificial Sequence

<220>
<223> PDGFRB(1-518) dimerization domain

<400> 83

Met Arg Leu Pro Gly Ala Met Pro Ala Leu Ala Leu Lys Gly Glu Leu
1   5   10   15

Leu Leu Leu Ser Leu Leu Leu Leu Leu Glu Pro Gln Ile Ser Gln Gly
            20   25   30

Leu Val Val Thr Pro Pro Gly Pro Glu Leu Val Leu Asn Val Ser Ser
        35   40   45

Thr Phe Val Leu Thr Cys Ser Gly Ser Ala Pro Val Val Trp Glu Arg
    50   55   60

Met Ser Gln Glu Pro Pro Gln Glu Met Ala Lys Ala Gln Asp Gly Thr
65   70   75   80

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

Glu Tyr Phe Cys Thr His Asn Asp Ser Arg Gly Leu Glu Thr Asp Glu
            100                 105                 110

Arg Lys Arg Leu Tyr Ile Phe Val Pro Asp Pro Thr Val Gly Phe Leu
        115                 120                 125

Pro Asn Asp Ala Glu Glu Leu Phe Ile Phe Leu Thr Glu Ile Thr Glu
    130                 135                 140

Ile Thr Ile Pro Cys Arg Val Thr Asp Pro Gln Leu Val Val Thr Leu
145                 150                 155                 160

His Glu Lys Lys Gly Asp Val Ala Leu Pro Val Pro Tyr Asp His Gln
                165                 170                 175

Arg Gly Phe Ser Gly Ile Phe Glu Asp Arg Ser Tyr Ile Cys Lys Thr
            180                 185                 190

Thr Ile Gly Asp Arg Glu Val Asp Ser Asp Ala Tyr Tyr Val Tyr Arg
        195                 200                 205

Leu Gln Val Ser Ser Ile Asn Val Ser Val Asn Ala Val Gln Thr Val
    210                 215                 220

Val Arg Gln Gly Glu Asn Ile Thr Leu Met Cys Ile Val Ile Gly Asn
225                 230                 235                 240

Glu Val Val Asn Phe Glu Trp Thr Tyr Pro Arg Lys Glu Ser Gly Arg
                245                 250                 255

Leu Val Glu Pro Val Thr Asp Phe Leu Leu Asp Met Pro Tyr His Ile
            260                 265                 270

Arg Ser Ile Leu His Ile Pro Ser Ala Glu Leu Glu Asp Ser Gly Thr
        275                 280                 285
```

```
Tyr Thr Cys Asn Val Thr Glu Ser Val Asn Asp His Gln Asp Glu Lys
    290                 295                 300

Ala Ile Asn Ile Thr Val Val Glu Ser Gly Tyr Val Arg Leu Leu Gly
305                 310                 315                 320

Glu Val Gly Thr Leu Gln Phe Ala Glu Leu His Arg Ser Arg Thr Leu
                325                 330                 335

Gln Val Val Phe Glu Ala Tyr Pro Pro Pro Thr Val Leu Trp Phe Lys
            340                 345                 350

Asp Asn Arg Thr Leu Gly Asp Ser Ser Ala Gly Glu Ile Ala Leu Ser
        355                 360                 365

Thr Arg Asn Val Ser Glu Thr Arg Tyr Val Ser Glu Leu Thr Leu Val
    370                 375                 380

Arg Val Lys Val Ala Glu Ala Gly His Tyr Thr Met Arg Ala Phe His
385                 390                 395                 400

Glu Asp Ala Glu Val Gln Leu Ser Phe Gln Leu Gln Ile Asn Val Pro
                405                 410                 415

Val Arg Val Leu Glu Leu Ser Glu Ser His Pro Asp Ser Gly Glu Gln
            420                 425                 430

Thr Val Arg Cys Arg Gly Arg Gly Met Pro Gln Pro Asn Ile Ile Trp
        435                 440                 445

Ser Ala Cys Arg Asp Leu Lys Arg Cys Pro Arg Glu Leu Pro Pro Thr
    450                 455                 460

Leu Leu Gly Asn Ser Ser Glu Glu Glu Ser Gln Leu Glu Thr Asn Val
465                 470                 475                 480

Thr Tyr Trp Glu Glu Glu Gln Glu Phe Glu Val Val Ser Thr Leu Arg
                485                 490                 495

Leu Gln His Val Asp Arg Pro Leu Ser Val Arg Cys Thr Leu Arg Asn
            500                 505                 510
```

Ala Val Gly Gln Asp Thr
515

<210> 84
<211> 54
<212> PRT
<213> Artificial Sequence

<220>
<223> BCMA (1-54) dimerization domain

<400> 84

Met Leu Gln Met Ala Gly Gln Cys Ser Gln Asn Glu Tyr Phe Asp Ser
1 5 10 15

Leu Leu His Ala Cys Ile Pro Cys Gln Leu Arg Cys Ser Ser Asn Thr
20 25 30

Pro Pro Leu Thr Cys Gln Arg Tyr Cys Asn Ala Ser Val Thr Asn Ser
35 40 45

Val Lys Gly Thr Asn Ala
50

<210> 85
<211> 78
<212> PRT
<213> Artificial Sequence

<220>
<223> BAFF-R (1-78) dimerization domain

<400> 85

Met Arg Arg Gly Pro Arg Ser Leu Arg Gly Arg Asp Ala Pro Ala Pro
1 5 10 15

Thr Pro Cys Val Pro Ala Glu Cys Phe Asp Leu Leu Val Arg His Cys
20 25 30

Val Ala Cys Gly Leu Leu Arg Thr Pro Arg Pro Lys Pro Ala Gly Ala
35 40 45

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

Ala Gly Ala Gly Glu Ala Ala Leu Pro Leu Pro Gly Leu Leu
65   70   75

<210> 86
<211> 165
<212> PRT
<213> Artificial Sequence

<220>
<223> TACI (1-165) dimerization domain

<400> 86

Met Ser Gly Leu Gly Arg Ser Arg Arg Gly Gly Arg Ser Arg Val Asp
1   5   10   15

Gln Glu Glu Arg Phe Pro Gln Gly Leu Trp Thr Gly Val Ala Met Arg
            20   25   30

Ser Cys Pro Glu Glu Gln Tyr Trp Asp Pro Leu Leu Gly Thr Cys Met
        35   40   45

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

Phe Cys Arg Ser Leu Ser Cys Arg Lys Glu Gln Gly Lys Phe Tyr Asp
65   70   75   80

His Leu Leu Arg Asp Cys Ile Ser Cys Ala Ser Ile Cys Gly Gln His
                85   90   95

Pro Lys Gln Cys Ala Tyr Phe Cys Glu Asn Lys Leu Arg Ser Pro Val
            100   105   110

Asn Leu Pro Pro Glu Leu Arg Arg Gln Arg Ser Gly Glu Val Glu Asn
        115   120   125

Asn Ser Asp Asn Ser Gly Arg Tyr Gln Gly Leu Glu His Arg Gly Ser
    130   135   140

Glu Ala Ser Pro Ala Leu Pro Gly Leu Lys Leu Ser Ala Asp Gln Val
145 150 155 160

Ala Leu Val Tyr Ser
165

<210> 87
<211> 214
<212> PRT
<213> Artificial Sequence

<220>
<223> OX40 (1-214) dimerization domain

<400> 87

Met Cys Val Gly Ala Arg Arg Leu Gly Arg Gly Pro Cys Ala Ala Leu
1 5 10 15

Leu Leu Leu Gly Leu Gly Leu Ser Thr Val Thr Gly Leu His Cys Val
20 25 30

Gly Asp Thr Tyr Pro Ser Asn Asp Arg Cys Cys His Glu Cys Arg Pro
35 40 45

Gly Asn Gly Met Val Ser Arg Cys Ser Arg Ser Gln Asn Thr Val Cys
50 55 60

Arg Pro Cys Gly Pro Gly Phe Tyr Asn Asp Val Val Ser Ser Lys Pro
65 70 75 80

Cys Lys Pro Cys Thr Trp Cys Asn Leu Arg Ser Gly Ser Glu Arg Lys
85 90 95

Gln Leu Cys Thr Ala Thr Gln Asp Thr Val Cys Arg Cys Arg Ala Gly
100 105 110

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

Pro Pro Gly His Phe Ser Pro Gly Asp Asn Gln Ala Cys Lys Pro Trp
130 135 140

```
Thr Asn Cys Thr Leu Ala Gly Lys His Thr Leu Gln Pro Ala Ser Asn
145                 150                 155                 160


Ser Ser Asp Ala Ile Cys Glu Asp Arg Asp Pro Pro Ala Thr Gln Pro
                165                 170                 175


Gln Glu Thr Gln Gly Pro Pro Ala Arg Pro Ile Thr Val Gln Pro Thr
            180                 185                 190


Glu Ala Trp Pro Arg Thr Ser Gln Gly Pro Ser Thr Arg Pro Val Glu
        195                 200                 205


Val Pro Gly Gly Arg Ala
    210


<210>  88
<211>  69
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  CD8(138-206) tyrosine kinase activating domain

<400>  88

Thr Thr Thr Pro Ala Pro Arg Pro Pro Thr Pro Ala Pro Thr Ile Ala
1               5                   10                  15


Ser Gln Pro Leu Ser Leu Arg Pro Glu Ala Cys Arg Pro Ala Ala Gly
            20                  25                  30


Gly Ala Val His Thr Arg Gly Leu Asp Phe Ala Cys Asp Ile Tyr Ile
        35                  40                  45


Trp Ala Pro Leu Ala Gly Thr Cys Gly Val Leu Leu Leu Ser Leu Val
    50                  55                  60


Ile Thr Leu Tyr Cys
65


<210>  89
<211>  102
<212>  PRT
<213>  Artificial Sequence
```

<220>
<223> EpoR(237-338;L241G,L242P) tyrosine kinase activating domain

<400> 89

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

Leu Thr Leu Ser Leu Ile Leu Val Val Ile Leu Val Gly Pro Thr Val
            20   25   30

Leu Ala Leu Leu Ser His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro
        35   40   45

Gly Ile Pro Ser Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His
    50   55   60

Lys Gly Asn Phe Gln Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp
65   70   75   80

Trp Ser Pro Cys Thr Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu
                85   90   95

Val Leu Ser Glu Arg Cys
            100

<210> 90
<211> 102
<212> PRT
<213> Artificial Sequence

<220>
<223> EpoR(237-338) tyrosine kinase activating domain

<400> 90

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

Leu Thr Leu Ser Leu Ile Leu Val Val Ile Leu Val Leu Leu Thr Val
            20   25   30

Leu Ala Leu Leu Ser His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro
        35   40   45

Gly Ile Pro Ser Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His
50 55 60

Lys Gly Asn Phe Gln Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp
65 70 75 80

Trp Ser Pro Cys Thr Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu
85 90 95

Val Leu Ser Glu Arg Cys
100

<210> 91
<211> 46
<212> PRT
<213> Artificial Sequence

<220>
<223> EpoR(237-282;L241G,L242P) tyrosine kinase activating domain

<400> 91

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

Leu Thr Leu Ser Leu Ile Leu Val Val Ile Leu Val Gly Pro Thr Val
20 25 30

Leu Ala Leu Leu Ser His Arg Arg Ala Leu Lys Gln Lys Ile
35 40 45

<210> 92
<211> 92
<212> PRT
<213> Artificial Sequence

<220>
<223> GP130(609-700) tyrosine kinase activating domain

<400> 92

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

Val Cys Leu Ala Phe Leu Leu Thr Thr Leu Leu Gly Val Leu Phe Cys
            20   25   30

Phe Asn Lys Arg Asp Leu Ile Lys Lys His Ile Trp Pro Asn Val Pro
        35   40   45

Asp Pro Ser Lys Ser His Ile Ala Gln Trp Ser Pro His Thr Pro Pro
    50   55   60

Arg His Asn Phe Asn Ser Lys Asp Gln Met Tyr Ser Asp Gly Asn Phe
65   70   75   80

Thr Asp Val Ser Val Val Glu Ile Glu Ala Asn Asp
                85   90

<210> 93
<211> 99
<212> PRT
<213> Artificial Sequence

<220>
<223> PrlR(221-319) tyrosine kinase activating domain

<400> 93

Ala Thr Phe Ile Gln Ile Pro Ser Asp Phe Thr Met Asn Asp Thr Thr
1   5   10   15

Val Trp Ile Ser Val Ala Val Leu Ser Ala Val Ile Cys Leu Ile Ile
            20   25   30

Val Trp Ala Val Ala Leu Lys Gly Tyr Ser Met Val Thr Cys Ile Phe
        35   40   45

Pro Pro Val Pro Gly Pro Lys Ile Lys Gly Phe Asp Ala His Leu Leu
    50   55   60

Glu Lys Gly Lys Ser Glu Glu Leu Leu Ser Ala Leu Gly Cys Gln Asp
65   70   75   80

Phe Pro Pro Thr Ser Asp Tyr Glu Asp Leu Leu Val Glu Tyr Leu Glu
                85   90   95

Val Asp Asp

<210> 94
<211> 102
<212> PRT
<213> Artificial Sequence

<220>
<223> GHR(251-352) tyrosine kinase activating domain

<400> 94

Leu Pro Gln Met Ser Gln Phe Thr Cys Glu Glu Asp Phe Tyr Phe Pro
1 5 10 15

Trp Leu Leu Ile Ile Ile Phe Gly Ile Phe Gly Leu Thr Val Met Leu
20 25 30

Phe Val Phe Leu Phe Ser Lys Gln Gln Arg Ile Lys Met Leu Ile Leu
35 40 45

Pro Pro Val Pro Val Pro Lys Ile Lys Gly Ile Asp Pro Asp Leu Leu
50 55 60

Lys Glu Gly Lys Leu Glu Glu Val Asn Thr Ile Leu Ala Ile His Asp
65 70 75 80

Ser Tyr Lys Pro Glu Phe His Ser Asp Asp Ser Trp Val Glu Phe Ile
85 90 95

Glu Leu Asp Ile Asp Glu
100

<210> 95
<211> 97
<212> PRT
<213> Artificial Sequence

<220>
<223> GCSFR(614-710) tyrosine kinase activating domain

<400> 95

Leu Thr Leu Met Thr Leu Thr Pro Glu Gly Ser Glu Leu His Ile Ile
1 5 10 15

```
Leu Gly Leu Phe Gly Leu Leu Leu Leu Leu Thr Cys Leu Cys Gly Thr
            20                  25                  30

Ala Trp Leu Cys Cys Ser Pro Asn Arg Lys Asn Pro Leu Trp Pro Ser
        35                  40                  45

Val Pro Asp Pro Ala His Ser Ser Leu Gly Ser Trp Val Pro Thr Ile
    50                  55                  60

Met Glu Glu Asp Ala Phe Gln Leu Pro Gly Leu Gly Thr Pro Pro Ile
65                  70                  75                  80

Thr Lys Leu Thr Val Leu Glu Glu Asp Glu Lys Lys Pro Val Pro Trp
                85                  90                  95

Glu
```

<210> 96
<211> 105
<212> PRT
<213> Artificial Sequence

<220>
<223> TPOR/MPLR(478-582) tyrosine kinase activating domain

<400> 96

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

Leu Val Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly
            20                  25                  30

Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg
        35                  40                  45

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

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

Asp Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys
85 90 95

Ser Ser Glu Arg Thr Pro Leu Pro Leu
100 105

<210> 97
<211> 51
<212> PRT
<213> Artificial Sequence

<220>
<223> TPOR/MPLR(478-528) tyrosine kinase activating domain

<400> 97

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

Leu Val Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly
20 25 30

Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg
35 40 45

His Ala Leu
50

<210> 98
<211> 348
<212> PRT
<213> Artificial Sequence

<220>
<223> EGFR(632-979) tyrosine kinase activating domain

<400> 98

Gly Leu Glu Gly Cys Pro Thr Asn Gly Pro Lys Ile Pro Ser Ile Ala
1 5 10 15

Thr Gly Met Val Gly Ala Leu Leu Leu Leu Leu Val Val Ala Leu Gly
20 25 30

```
Ile Gly Leu Phe Met Arg Arg Arg His Ile Val Arg Lys Arg Thr Leu
        35                  40                  45

Arg Arg Leu Leu Gln Glu Arg Glu Leu Val Glu Pro Leu Thr Pro Ser
    50                  55                  60

Gly Glu Ala Pro Asn Gln Ala Leu Leu Arg Ile Leu Lys Glu Thr Glu
65                  70                  75                  80

Phe Lys Lys Ile Lys Val Leu Gly Ser Gly Ala Phe Gly Thr Val Tyr
                85                  90                  95

Lys Gly Leu Trp Ile Pro Glu Gly Glu Lys Val Lys Ile Pro Val Ala
            100                 105                 110

Ile Lys Glu Leu Arg Glu Ala Thr Ser Pro Lys Ala Asn Lys Glu Ile
        115                 120                 125

Leu Asp Glu Ala Tyr Val Met Ala Ser Val Asp Asn Pro His Val Cys
    130                 135                 140

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

Leu Met Pro Phe Gly Cys Leu Leu Asp Tyr Val Arg Glu His Lys Asp
                165                 170                 175

Asn Ile Gly Ser Gln Tyr Leu Leu Asn Trp Cys Val Gln Ile Ala Lys
            180                 185                 190

Gly Met Asn Tyr Leu Glu Asp Arg Arg Leu Val His Arg Asp Leu Ala
        195                 200                 205

Ala Arg Asn Val Leu Val Lys Thr Pro Gln His Val Lys Ile Thr Asp
    210                 215                 220

Phe Gly Leu Ala Lys Leu Leu Gly Ala Glu Glu Lys Glu Tyr His Ala
225                 230                 235                 240

Glu Gly Gly Lys Val Pro Ile Lys Trp Met Ala Leu Glu Ser Ile Leu
                245                 250                 255
```

```
His Arg Ile Tyr Thr His Gln Ser Asp Val Trp Ser Tyr Gly Val Thr
            260                 265                 270

Val Trp Glu Leu Met Thr Phe Gly Ser Lys Pro Tyr Asp Gly Ile Pro
        275                 280                 285

Ala Ser Glu Ile Ser Ser Ile Leu Glu Lys Gly Glu Arg Leu Pro Gln
    290                 295                 300

Pro Pro Ile Cys Thr Ile Asp Val Tyr Met Ile Met Val Lys Cys Trp
305                 310                 315                 320

Met Ile Asp Ala Asp Ser Arg Pro Lys Phe Arg Glu Leu Ile Ile Glu
                325                 330                 335

Phe Ser Lys Met Ala Arg Asp Pro Gln Arg Tyr Leu
            340                 345


<210>  99
<211>  405
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  FGFR1(363-767) tyrosine kinase activating domain

<400>  99

Glu Glu Arg Pro Ala Val Met Thr Ser Pro Leu Tyr Leu Glu Ile Ile
1               5                   10                  15

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

Ile Val Tyr Lys Met Lys Ser Gly Thr Lys Lys Ser Asp Phe His Ser
        35                  40                  45

Gln Met Ala Val His Lys Leu Ala Lys Ser Ile Pro Leu Arg Arg Gln
    50                  55                  60

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

```
Leu Val Arg Pro Ser Arg Leu Ser Ser Ser Gly Thr Pro Met Leu Ala
                85                  90                  95

Gly Val Ser Glu Tyr Glu Leu Pro Glu Asp Pro Arg Trp Glu Leu Pro
            100                 105                 110

Arg Asp Arg Leu Val Leu Gly Lys Pro Leu Gly Glu Gly Cys Phe Gly
        115                 120                 125

Gln Val Val Leu Ala Glu Ala Ile Gly Leu Asp Lys Asp Lys Pro Asn
    130                 135                 140

Arg Val Thr Lys Val Ala Val Lys Met Leu Lys Ser Asp Ala Thr Glu
145                 150                 155                 160

Lys Asp Leu Ser Asp Leu Ile Ser Glu Met Glu Met Met Lys Met Ile
                165                 170                 175

Gly Lys His Lys Asn Ile Ile Asn Leu Leu Gly Ala Cys Thr Gln Asp
            180                 185                 190

Gly Pro Leu Tyr Val Ile Val Glu Tyr Ala Ser Lys Gly Asn Leu Arg
        195                 200                 205

Glu Tyr Leu Gln Ala Arg Arg Pro Pro Gly Leu Glu Tyr Cys Tyr Asn
    210                 215                 220

Pro Ser His Asn Pro Glu Glu Gln Leu Ser Ser Lys Asp Leu Val Ser
225                 230                 235                 240

Cys Ala Tyr Gln Val Ala Arg Gly Met Glu Tyr Leu Ala Ser Lys Lys
                245                 250                 255

Cys Ile His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Thr Glu Asp
            260                 265                 270

Asn Val Met Lys Ile Ala Asp Phe Gly Leu Ala Arg Asp Ile His His
        275                 280                 285
```

```
Ile Asp Tyr Tyr Lys Lys Thr Thr Asn Gly Arg Leu Pro Val Lys Trp
    290                 295                 300

Met Ala Pro Glu Ala Leu Phe Asp Arg Ile Tyr Thr His Gln Ser Asp
305                 310                 315                 320

Val Trp Ser Phe Gly Val Leu Leu Trp Glu Ile Phe Thr Leu Gly Gly
                325                 330                 335

Ser Pro Tyr Pro Gly Val Pro Val Glu Glu Leu Phe Lys Leu Leu Lys
            340                 345                 350

Glu Gly His Arg Met Asp Lys Pro Ser Asn Cys Thr Asn Glu Leu Tyr
        355                 360                 365

Met Met Met Arg Asp Cys Trp His Ala Val Pro Ser Gln Arg Pro Thr
    370                 375                 380

Phe Lys Gln Leu Val Glu Asp Leu Asp Arg Ile Val Ala Leu Thr Ser
385                 390                 395                 400

Asn Gln Glu Tyr Leu
                405
```

<210> 100
<211> 440
<212> PRT
<213> Artificial Sequence

<220>
<223> PDGFRA(515-954) tyrosine kinase activating domain

<400> 100

```
Lys Leu Val Ala Pro Thr Leu Arg Ser Glu Leu Thr Val Ala Ala Ala
1               5                   10                  15

Val Leu Val Leu Leu Val Ile Val Ile Ile Ser Leu Ile Val Leu Val
            20                  25                  30

Val Ile Trp Lys Gln Lys Pro Arg Tyr Glu Ile Arg Trp Arg Val Ile
        35                  40                  45
```

```
Glu Ser Ile Ser Pro Asp Gly His Glu Tyr Ile Tyr Val Asp Pro Met
    50                  55                  60

Gln Leu Pro Tyr Asp Ser Arg Trp Glu Phe Pro Arg Asp Gly Leu Val
65                  70                  75                  80

Leu Gly Arg Val Leu Gly Ser Gly Ala Phe Gly Lys Val Val Glu Gly
                85                  90                  95

Thr Ala Tyr Gly Leu Ser Arg Ser Gln Pro Val Met Lys Val Ala Val
            100                 105                 110

Lys Met Leu Lys Pro Thr Ala Arg Ser Ser Glu Lys Gln Ala Leu Met
        115                 120                 125

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

Asn Leu Leu Gly Ala Cys Thr Lys Ser Gly Pro Ile Tyr Ile Ile Thr
145                 150                 155                 160

Glu Tyr Cys Phe Tyr Gly Asp Leu Val Asn Tyr Leu His Lys Asn Arg
                165                 170                 175

Asp Ser Phe Leu Ser His His Pro Glu Lys Pro Lys Lys Glu Leu Asp
            180                 185                 190

Ile Phe Gly Leu Asn Pro Ala Asp Glu Ser Thr Arg Ser Tyr Val Ile
        195                 200                 205

Leu Ser Phe Glu Asn Asn Gly Asp Tyr Met Asp Met Lys Gln Ala Asp
    210                 215                 220

Thr Thr Gln Tyr Val Pro Met Leu Glu Arg Lys Glu Val Ser Lys Tyr
225                 230                 235                 240

Ser Asp Ile Gln Arg Ser Leu Tyr Asp Arg Pro Ala Ser Tyr Lys Lys
                245                 250                 255

Lys Ser Met Leu Asp Ser Glu Val Lys Asn Leu Leu Ser Asp Asp Asn
            260                 265                 270
```

```
Ser Glu Gly Leu Thr Leu Leu Asp Leu Leu Ser Phe Thr Tyr Gln Val
        275                 280                 285

Ala Arg Gly Met Glu Phe Leu Ala Ser Lys Asn Cys Val His Arg Asp
    290                 295                 300

Leu Ala Ala Arg Asn Val Leu Leu Ala Gln Gly Lys Ile Val Lys Ile
305                 310                 315                 320

Cys Asp Phe Gly Leu Ala Arg Asp Ile Met His Asp Ser Asn Tyr Val
                325                 330                 335

Ser Lys Gly Ser Thr Phe Leu Pro Val Lys Trp Met Ala Pro Glu Ser
            340                 345                 350

Ile Phe Asp Asn Leu Tyr Thr Thr Leu Ser Asp Val Trp Ser Tyr Gly
        355                 360                 365

Ile Leu Leu Trp Glu Ile Phe Ser Leu Gly Gly Thr Pro Tyr Pro Gly
    370                 375                 380

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

Met Ala Lys Pro Asp His Ala Thr Ser Glu Val Tyr Glu Ile Met Val
                405                 410                 415

Lys Cys Trp Asn Ser Glu Pro Glu Lys Arg Pro Ser Phe Tyr His Leu
            420                 425                 430

Ser Glu Ile Val Glu Asn Leu Leu
        435                 440
```

<210> 101
<211> 444
<212> PRT
<213> Artificial Sequence

<220>
<223> PDGFRB(519-962) tyrosine kinase activating domain

<400> 101

```
Gln Glu Val Ile Val Val Pro His Ser Leu Pro Phe Lys Val Val Val
1               5                   10                  15

Ile Ser Ala Ile Leu Ala Leu Val Val Leu Thr Ile Ile Ser Leu Ile
            20                  25                  30

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

Lys Val Ile Glu Ser Val Ser Ser Asp Gly His Glu Tyr Ile Tyr Val
    50                  55                  60

Asp Pro Met Gln Leu Pro Tyr Asp Ser Thr Trp Glu Leu Pro Arg Asp
65                  70                  75                  80

Gln Leu Val Leu Gly Arg Thr Leu Gly Ser Gly Ala Phe Gly Gln Val
                85                  90                  95

Val Glu Ala Thr Ala His Gly Leu Ser His Ser Gln Ala Thr Met Lys
            100                 105                 110

Val Ala Val Lys Met Leu Lys Ser Thr Ala Arg Ser Ser Glu Lys Gln
        115                 120                 125

Ala Leu Met Ser Glu Leu Lys Ile Met Ser His Leu Gly Pro His Leu
    130                 135                 140

Asn Val Val Asn Leu Leu Gly Ala Cys Thr Lys Gly Gly Pro Ile Tyr
145                 150                 155                 160

Ile Ile Thr Glu Tyr Cys Arg Tyr Gly Asp Leu Val Asp Tyr Leu His
                165                 170                 175

Arg Asn Lys His Thr Phe Leu Gln His His Ser Asp Lys Arg Arg Pro
            180                 185                 190

Pro Ser Ala Glu Leu Tyr Ser Asn Ala Leu Pro Val Gly Leu Pro Leu
        195                 200                 205
```

```
Pro Ser His Val Ser Leu Thr Gly Glu Ser Asp Gly Gly Tyr Met Asp
    210                 215                 220

Met Ser Lys Asp Glu Ser Val Asp Tyr Val Pro Met Leu Asp Met Lys
225                 230                 235                 240

Gly Asp Val Lys Tyr Ala Asp Ile Glu Ser Ser Asn Tyr Met Ala Pro
                245                 250                 255

Tyr Asp Asn Tyr Val Pro Ser Ala Pro Glu Arg Thr Cys Arg Ala Thr
            260                 265                 270

Leu Ile Asn Glu Ser Pro Val Leu Ser Tyr Met Asp Leu Val Gly Phe
        275                 280                 285

Ser Tyr Gln Val Ala Asn Gly Met Glu Phe Leu Ala Ser Lys Asn Cys
    290                 295                 300

Val His Arg Asp Leu Ala Ala Arg Asn Val Leu Ile Cys Glu Gly Lys
305                 310                 315                 320

Leu Val Lys Ile Cys Asp Phe Gly Leu Ala Arg Asp Ile Met Arg Asp
                325                 330                 335

Ser Asn Tyr Ile Ser Lys Gly Ser Thr Phe Leu Pro Leu Lys Trp Met
            340                 345                 350

Ala Pro Glu Ser Ile Phe Asn Ser Leu Tyr Thr Thr Leu Ser Asp Val
        355                 360                 365

Trp Ser Phe Gly Ile Leu Leu Trp Glu Ile Phe Thr Leu Gly Gly Thr
    370                 375                 380

Pro Tyr Pro Glu Leu Pro Met Asn Glu Gln Phe Tyr Asn Ala Ile Lys
385                 390                 395                 400

Arg Gly Tyr Arg Met Ala Gln Pro Ala His Ala Ser Asp Glu Ile Tyr
                405                 410                 415

Glu Ile Met Gln Lys Cys Trp Glu Glu Lys Phe Glu Ile Arg Pro Pro
            420                 425                 430
```

Phe Ser Gln Leu Val Leu Leu Leu Glu Arg Leu Leu
435 440

<210> 102
<211> 102
<212> PRT
<213> Artificial Sequence

<220>
<223> murine EpoR(236-337;L264G,L265P) tyrosine kinase activating domain

<400> 102

Ser Glu Pro Ala Ser Leu Leu Thr Ala Ser Asp Leu Asp Pro Leu Ile
1 5 10 15

Leu Thr Leu Ser Leu Ile Leu Val Leu Ile Ser Leu Gly Pro Thr Val
20 25 30

Leu Ala Leu Leu Ser His Arg Arg Thr Leu Gln Gln Lys Ile Trp Pro
35 40 45

Gly Ile Pro Ser Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His
50 55 60

Lys Gly Asn Phe Gln Leu Trp Leu Leu Gln Arg Asp Gly Cys Leu Trp
65 70 75 80

Trp Ser Pro Gly Ser Ser Phe Pro Glu Asp Pro Pro Ala His Leu Glu
85 90 95

Val Leu Ser Glu Pro Arg
100

<210> 103
<211> 236
<212> PRT
<213> Artificial Sequence

<220>
<223> EpoR(273-508) tyrosine kinase activating domain

<400> 103

```
Ser His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser
1               5                   10                  15

Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe
            20                  25                  30

Gln Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys
        35                  40                  45

Thr Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu Val Leu Ser Glu
    50                  55                  60

Arg Cys Trp Gly Thr Met Gln Ala Val Glu Pro Gly Thr Asp Asp Glu
65                  70                  75                  80

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

Leu Val Leu Asp Lys Trp Leu Leu Pro Arg Asn Pro Pro Ser Glu Asp
            100                 105                 110

Leu Pro Gly Pro Gly Gly Ser Val Asp Ile Val Ala Met Asp Glu Gly
        115                 120                 125

Ser Glu Ala Ser Ser Cys Ser Ser Ala Leu Ala Ser Lys Pro Ser Pro
    130                 135                 140

Glu Gly Ala Ser Ala Ala Ser Phe Glu Tyr Thr Ile Leu Asp Pro Ser
145                 150                 155                 160

Ser Gln Leu Leu Arg Pro Trp Thr Leu Cys Pro Glu Leu Pro Pro Thr
                165                 170                 175

Pro Pro His Leu Lys Tyr Leu Tyr Leu Val Val Ser Asp Ser Gly Ile
            180                 185                 190

Ser Thr Asp Tyr Ser Ser Gly Asp Ser Gln Gly Ala Gln Gly Gly Leu
        195                 200                 205

Ser Asp Gly Pro Tyr Ser Asn Pro Tyr Glu Asn Ser Leu Ile Pro Ala
    210                 215                 220
```

Ala Glu Pro Leu Pro Pro Ser Tyr Val Ala Cys Ser
225 230 235

<210> 104
<211> 105
<212> PRT
<213> Artificial Sequence

<220>
<223> PD1(156-191)-TPOR/MPLR (514-582) TpoR tyrosine kinase activating domain with transmembrane domain variant

<400> 104

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

Gly Val Val Gly Gly Leu Leu Gly Ser Leu Val Leu Leu Val Trp Val
20 25 30

Leu Ala Val Ile Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg
35 40 45

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

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

Asp Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys
85 90 95

Ser Ser Glu Arg Thr Pro Leu Pro Leu
100 105

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

<220>
<223> TPOR/MPLR(478-582) (wildtype sequence) TpoR tyrosine kinase activating domain with transmembrane domain variant

<400> 105

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

Leu Val Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly
20 25 30

Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg
35 40 45

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

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

Asp Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys
85 90 95

Ser Ser Glu Arg Thr Pro Leu Pro Leu
100 105

<210> 106
<211> 104
<212> PRT
<213> Artificial Sequence

<220>
<223> TPOR/MPLR(N-1) TpoR tyrosine kinase activating domain with transmembrane domain
variant

<400> 106

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

Val Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu
20 25 30

Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His
35 40 45

Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr
50 55 60

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

Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser
85 90 95

Ser Glu Arg Thr Pro Leu Pro Leu
100

<210> 107
<211> 103
<212> PRT
<213> Artificial Sequence

<220>
<223> TPOR/MPLR(N-2) TpoR tyrosine kinase activating domain with transmembrane domain
variant

<400> 107

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

Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu
20 25 30

Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala
35 40 45

Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu
50 55 60

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

Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser
85 90 95

Glu Arg Thr Pro Leu Pro Leu

100

<210> 108
<211> 104
<212> PRT
<213> Artificial Sequence

<220>
<223> TPOR/MPLR(N-2+1) TpoR tyrosine kinase activating domain with transmembrane domain
variant

<400> 108

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

Val Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu
20 25 30

Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His
35 40 45

Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr
50 55 60

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

Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser
85 90 95

Ser Glu Arg Thr Pro Leu Pro Leu
100

<210> 109
<211> 102
<212> PRT
<213> Artificial Sequence

<220>
<223> TPOR/MPLR(N-3) TpoR tyrosine kinase activating domain with transmembrane domain
variant

<400> 109

```
Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ser Leu Val Thr
1               5                   10                  15


Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu
            20                  25                  30


Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu
        35                  40                  45


Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg
    50                  55                  60


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


Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu
                85                  90                  95


Arg Thr Pro Leu Pro Leu
            100
```

<210> 110
<211> 101
<212> PRT
<213> Artificial Sequence

<220>
<223> TPOR/MPLR(N-4) TpoR tyrosine kinase activating domain with transmembrane domain
variant

<400> 110

```
Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Leu Val Thr Ala
1               5                   10                  15


Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu
            20                  25                  30


Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp
        35                  40                  45


Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp
```

50 55 60

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

Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg
85 90 95

Thr Pro Leu Pro Leu
100

<210> 111
<211> 102
<212> PRT
<213> Artificial Sequence

<220>
<223> TPOR/MPLR(N-4+1) TpoR tyrosine kinase activating domain with transmembrane domain
variant

<400> 111

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

Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu
20 25 30

Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu
35 40 45

Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg
50 55 60

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

Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu
85 90 95

Arg Thr Pro Leu Pro Leu
100

<210> 112
<211> 100
<212> PRT
<213> Artificial Sequence

<220>
<223> TPOR/MPLR(N-5) TpoR tyrosine kinase activating domain with transmembrane domain
variant

<400> 112

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

His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu Arg
20 25 30

Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp Pro
35 40 45

Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp Thr
50 55 60

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

Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg Thr
85 90 95

Pro Leu Pro Leu
100

<210> 113
<211> 99
<212> PRT
<213> Artificial Sequence

<220>
<223> TPOR/MPLR(N-6) TpoR tyrosine kinase activating domain with transmembrane domain
variant

<400> 113

Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Thr Ala Leu His

1 5 10 15

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

Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp Pro Ser
35 40 45

Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp Thr Ala
50 55 60

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

Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg Thr Pro
85 90 95

Leu Pro Leu

<210> 114
<211> 98
<212> PRT
<213> Artificial Sequence

<220>
<223> TPOR/MPLR(N-7) TpoR tyrosine kinase activating domain with transmembrane domain
variant

<400> 114

Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Leu His Leu
1 5 10 15

Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu Arg Trp Gln
20 25 30

Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp Pro Ser Leu
35 40 45

Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp Thr Ala Ala
50 55 60

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

Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg Thr Pro Leu
85 90 95

Pro Leu

<210> 115
<211> 97
<212> PRT
<213> Artificial Sequence

<220>
<223> TPOR/MPLR(N-8) TpoR tyrosine kinase activating domain with transmembrane domain
variant

<400> 115

Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Leu His Leu Val
1 5 10 15

Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu Arg Trp Gln Phe
20 25 30

Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp Pro Ser Leu Pro
35 40 45

Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp Thr Ala Ala Leu
50 55 60

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

Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg Thr Pro Leu Pro
85 90 95

Leu

<210> 116

<211> 96
<212> PRT
<213> Artificial Sequence

<220>
<223> TPOR/MPLR(N-9) TpoR tyrosine kinase activating domain with transmembrane domain
variant

<400> 116

Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr His Leu Val Leu
1 5 10 15

Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro
20 25 30

Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp Pro Ser Leu Pro Asp
35 40 45

Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser
50 55 60

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

Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu
85 90 95

<210> 117
<211> 95
<212> PRT
<213> Artificial Sequence

<220>
<223> TPOR/MPLR(N-10) TpoR tyrosine kinase activating domain with transmembrane domain
variant

<400> 117

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

Leu Ser Ala Val Leu Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala
20 25 30

His Tyr Arg Arg Leu Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu
        35   40   45

His Arg Val Leu Gly Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro
    50   55   60

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

Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu
                85   90   95

<210> 118
<211> 94
<212> PRT
<213> Artificial Sequence

<220>
<223> TPOR/MPLR(N-11) TpoR tyrosine kinase activating domain with transmembrane domain
       variant

<400> 118

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

Ser Ala Val Leu Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His
            20   25   30

Tyr Arg Arg Leu Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His
        35   40   45

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

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

Glu Ile Leu Pro Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu
                85   90

<210> 119

<211> 93
<212> PRT
<213> Artificial Sequence

<220>
<223> TPOR/MPLR(N-12) TpoR tyrosine kinase activating domain with transmembrane domain
variant

<400> 119

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

Ala Val Leu Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr
20 25 30

Arg Arg Leu Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg
35 40 45

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

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

Ile Leu Pro Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu
85 90

<210> 120
<211> 92
<212> PRT
<213> Artificial Sequence

<220>
<223> TPOR/MPLR(N-13) TpoR tyrosine kinase activating domain with transmembrane domain
variant

<400> 120

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

Val Leu Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg
20 25 30

Arg Leu Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val
35 40 45

Leu Gly Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala
50 55 60

Thr Val Ser Asp Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile
65 70 75 80

Leu Pro Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu
85 90

<210> 121
<211> 91
<212> PRT
<213> Artificial Sequence

<220>
<223> TPOR/MPLR(N-14) TpoR tyrosine kinase activating domain with transmembrane domain
variant

<400> 121

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

Leu Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg
20 25 30

Leu Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu
35 40 45

Gly Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr
50 55 60

Val Ser Asp Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu
65 70 75 80

Pro Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu
85 90

<210> 122

<211> 90
<212> PRT
<213> Artificial Sequence

<220>
<223> TPOR/MPLR(N-15) TpoR tyrosine kinase activating domain with transmembrane domain
variant

<400> 122

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

Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu
20 25 30

Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly
35 40 45

Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val
50 55 60

Ser Asp Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro
65 70 75 80

Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu
85 90

<210> 123
<211> 89
<212> PRT
<213> Artificial Sequence

<220>
<223> TPOR/MPLR(N-16) TpoR tyrosine kinase activating domain with transmembrane domain
variant

<400> 123

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

Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg
20 25 30

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

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

Asp Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys
65   70   75   80

Ser Ser Glu Arg Thr Pro Leu Pro Leu
                85

<210> 124
<211> 88
<212> PRT
<213> Artificial Sequence

<220>
<223> TPOR/MPLR(N-17) TpoR tyrosine kinase activating domain with transmembrane domain
       variant

<400> 124

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

Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His
            20   25   30

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

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

Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser
65   70   75   80

Ser Glu Arg Thr Pro Leu Pro Leu
                85

<210> 125

<211> 87
<212> PRT
<213> Artificial Sequence

<220>
<223> TPOR/MPLR(N-18) TpoR tyrosine kinase activating domain with transmembrane domain
variant

<400> 125

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

Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala
20 25 30

Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu
35 40 45

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

Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser
65 70 75 80

Glu Arg Thr Pro Leu Pro Leu
85

<210> 126
<211> 106
<212> PRT
<213> Artificial Sequence

<220>
<223> TPOR/MPLR(N+1) TpoR tyrosine kinase activating domain with transmembrane domain
variant

<400> 126

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

Ser Leu Val Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu
20 25 30

Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu
        35   40   45

Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly
    50   55   60

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

Ser Asp Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro
                85   90   95

Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu
            100   105

<210> 127
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> TPOR/MPLR(N+2) TpoR tyrosine kinase activating domain with transmembrane domain
       variant

<400> 127

Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Val Leu
1   5   10   15

Ile Ser Leu Val Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala Val
            20   25   30

Leu Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg
        35   40   45

Leu Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu
    50   55   60

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

Val Ser Asp Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu

85 90 95

Pro Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu
100 105

<210> 128
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> TPOR/MPLR(N+3) TpoR tyrosine kinase activating domain with transmembrane domain
variant

<400> 128

Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Leu Val
1 5 10 15

Leu Ile Ser Leu Val Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala
20 25 30

Val Leu Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg
35 40 45

Arg Leu Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val
50 55 60

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

Thr Val Ser Asp Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile
85 90 95

Leu Pro Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu
100 105

<210> 129
<211> 109
<212> PRT
<213> Artificial Sequence

<220>
<223> TPOR/MPLR(N+4) TpoR tyrosine kinase activating domain with transmembrane

domain
variant

<400> 129

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

Val Leu Ile Ser Leu Val Thr Ala Leu His Leu Val Leu Gly Leu Ser
20 25 30

Ala Val Leu Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr
35 40 45

Arg Arg Leu Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg
50 55 60

Val Leu Gly Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys
65 70 75 80

Ala Thr Val Ser Asp Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu
85 90 95

Ile Leu Pro Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu
100 105

<210> 130
<211> 110
<212> PRT
<213> Artificial Sequence

<220>
<223> TPOR/MPLR(N+5) TpoR tyrosine kinase activating domain with transmembrane domain
variant

<400> 130

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

Leu Val Leu Ile Ser Leu Val Thr Ala Leu His Leu Val Leu Gly Leu
20 25 30

Ser Ala Val Leu Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His

```
        35                  40                  45

Tyr Arg Arg Leu Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His
    50                  55                  60

Arg Val Leu Gly Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro
65                  70                  75                  80

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

Glu Ile Leu Pro Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu
            100                 105                 110
```

<210> 131
<211> 111
<212> PRT
<213> Artificial Sequence

<220>
<223> TPOR/MPLR(N+6) TpoR tyrosine kinase activating domain with transmembrane domain
variant

<400> 131

```
Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Leu Leu
1               5                   10                  15

Ile Leu Val Leu Ile Ser Leu Val Thr Ala Leu His Leu Val Leu Gly
            20                  25                  30

Leu Ser Ala Val Leu Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala
        35                  40                  45

His Tyr Arg Arg Leu Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu
    50                  55                  60

His Arg Val Leu Gly Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro
65                  70                  75                  80

Pro Lys Ala Thr Val Ser Asp Thr Cys Glu Glu Val Glu Pro Ser Leu
                85                  90                  95
```

Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu
100 105 110

<210> 132
<211> 112
<212> PRT
<213> Artificial Sequence

<220>
<223> TPOR/MPLR(N+7) TpoR tyrosine kinase activating domain with transmembrane domain
variant

<400> 132

Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Val Leu
1 5 10 15

Leu Ile Leu Val Leu Ile Ser Leu Val Thr Ala Leu His Leu Val Leu
20 25 30

Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro
35 40 45

Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp Pro Ser Leu Pro Asp
50 55 60

Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser
65 70 75 80

Pro Pro Lys Ala Thr Val Ser Asp Thr Cys Glu Glu Val Glu Pro Ser
85 90 95

Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu
100 105 110

<210> 133
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<223> TPOR/MPLR(N+8) TpoR tyrosine kinase activating domain with transmembrane domain
variant

<400> 133

Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Leu Val
1 5 10 15

Leu Leu Ile Leu Val Leu Ile Ser Leu Val Thr Ala Leu His Leu Val
20 25 30

Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu Arg Trp Gln Phe
35 40 45

Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp Pro Ser Leu Pro
50 55 60

Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp Thr Ala Ala Leu
65 70 75 80

Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys Glu Glu Val Glu Pro
85 90 95

Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg Thr Pro Leu Pro
100 105 110

Leu

<210> 134
<211> 144
<212> PRT
<213> Artificial Sequence

<220>
<223> IL7R(316-459) tyrosine kinase effector domains

<400> 134

Ala Arg Asp Glu Val Glu Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln
1 5 10 15

Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly Asp Val Gln Ser Pro
20 25 30

Asn Cys Pro Ser Glu Asp Val Val Ile Thr Pro Glu Ser Phe Gly Arg

```
        35                  40                  45

Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn Val Ser Ala Cys Asp Ala
    50                  55                  60

Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg Glu Ser Gly Lys
65                  70                  75                  80

Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu Ser Leu Gly Thr Thr
                85                  90                  95

Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln Ser Gly Ile Leu Thr
            100                 105                 110

Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu Thr Ser Leu Gly Ser
        115                 120                 125

Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln Asn Gln
    130                 135                 140


<210>  135
<211>  219
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  IL2Rb(333-551) tyrosine kinase effector domains

<400>  135

Val Thr Gln Leu Leu Leu Gln Gln Asp Lys Val Pro Glu Pro Ala Ser
1               5                   10                  15

Leu Ser Ser Asn His Ser Leu Thr Ser Cys Phe Thr Asn Gln Gly Tyr
            20                  25                  30

Phe Phe Phe His Leu Pro Asp Ala Leu Glu Ile Glu Ala Cys Gln Val
        35                  40                  45

Tyr Phe Thr Tyr Asp Pro Tyr Ser Glu Glu Asp Pro Asp Glu Gly Val
    50                  55                  60

Ala Gly Ala Pro Thr Gly Ser Ser Pro Gln Pro Leu Gln Pro Leu Ser
```

65 70 75 80

Gly Glu Asp Asp Ala Tyr Cys Thr Phe Pro Ser Arg Asp Asp Leu Leu
85 90 95

Leu Phe Ser Pro Ser Leu Leu Gly Gly Pro Ser Pro Pro Ser Thr Ala
100 105 110

Pro Gly Gly Ser Gly Ala Gly Glu Glu Arg Met Pro Pro Ser Leu Gln
115 120 125

Glu Arg Val Pro Arg Asp Trp Asp Pro Gln Pro Leu Gly Pro Pro Thr
130 135 140

Pro Gly Val Pro Asp Leu Val Asp Phe Gln Pro Pro Pro Glu Leu Val
145 150 155 160

Leu Arg Glu Ala Gly Glu Glu Val Pro Asp Ala Gly Pro Arg Glu Gly
165 170 175

Val Ser Phe Pro Trp Ser Arg Pro Pro Gly Gln Gly Glu Phe Arg Ala
180 185 190

Leu Asn Ala Arg Leu Pro Leu Asn Thr Asp Ala Tyr Leu Ser Leu Gln
195 200 205

Glu Leu Gln Gly Gln Asp Pro Thr His Leu Val
210 215

<210> 136
<211> 50
<212> PRT
<213> Artificial Sequence

<220>
<223> IFNAR1(508-557) tyrosine kinase effector domains

<400> 136

Ile Ser Thr Ile Ala Thr Val Glu Glu Thr Asn Gln Thr Asp Glu Asp
1 5 10 15

His Lys Lys Tyr Ser Ser Gln Thr Ser Gln Asp Ser Gly Asn Tyr Ser

20 25 30

Asn Glu Asp Glu Ser Glu Ser Lys Thr Ser Glu Glu Leu Gln Gln Asp
35 40 45

Phe Val
50

<210> 137
<211> 206
<212> PRT
<213> Artificial Sequence

<220>
<223> IFNAR2(310-515) tyrosine kinase effector domains

<400> 137

Lys Lys Lys Val Trp Asp Tyr Asn Tyr Asp Asp Glu Ser Asp Ser Asp
1 5 10 15

Thr Glu Ala Ala Pro Arg Thr Ser Gly Gly Gly Tyr Thr Met His Gly
20 25 30

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

Gln Leu Ile Asp Pro Glu Ser Glu Glu Glu Pro Asp Leu Pro Glu Val
50 55 60

Asp Val Glu Leu Pro Thr Met Pro Lys Asp Ser Pro Gln Gln Leu Glu
65 70 75 80

Leu Leu Ser Gly Pro Cys Glu Arg Arg Lys Ser Pro Leu Gln Asp Pro
85 90 95

Phe Pro Glu Glu Asp Tyr Ser Ser Thr Glu Gly Ser Gly Gly Arg Ile
100 105 110

Thr Phe Asn Val Asp Leu Asn Ser Val Phe Leu Arg Val Leu Asp Asp
115 120 125

Glu Asp Ser Asp Asp Leu Glu Ala Pro Leu Met Leu Ser Ser His Leu

130 135 140

Glu Glu Met Val Asp Pro Glu Asp Pro Asp Asn Val Gln Ser Asn His
145 150 155 160

Leu Leu Ala Ser Gly Glu Gly Thr Gln Pro Thr Phe Pro Ser Pro Ser
165 170 175

Ser Glu Gly Leu Trp Ser Glu Asp Ala Pro Ser Asp Gln Ser Asp Thr
180 185 190

Ser Glu Ser Asp Val Asp Leu Gly Asp Gly Tyr Ile Met Arg
195 200 205

<210> 138
<211> 256
<212> PRT
<213> Artificial Sequence

<220>
<223> IFNAR1/2(IFNAR1 residues 508-557-IFNAR2 residues 310-515) tyrosine kinase effector domains

<400> 138

Ile Ser Thr Ile Ala Thr Val Glu Glu Thr Asn Gln Thr Asp Glu Asp
1 5 10 15

His Lys Lys Tyr Ser Ser Gln Thr Ser Gln Asp Ser Gly Asn Tyr Ser
20 25 30

Asn Glu Asp Glu Ser Glu Ser Lys Thr Ser Glu Glu Leu Gln Gln Asp
35 40 45

Phe Val Lys Lys Lys Val Trp Asp Tyr Asn Tyr Asp Asp Glu Ser Asp
50 55 60

Ser Asp Thr Glu Ala Ala Pro Arg Thr Ser Gly Gly Gly Tyr Thr Met
65 70 75 80

His Gly Leu Thr Val Arg Pro Leu Gly Gln Ala Ser Ala Thr Ser Thr
85 90 95

```
Glu Ser Gln Leu Ile Asp Pro Glu Ser Glu Glu Glu Pro Asp Leu Pro
            100                 105                 110

Glu Val Asp Val Glu Leu Pro Thr Met Pro Lys Asp Ser Pro Gln Gln
        115                 120                 125

Leu Glu Leu Leu Ser Gly Pro Cys Glu Arg Arg Lys Ser Pro Leu Gln
    130                 135                 140

Asp Pro Phe Pro Glu Glu Asp Tyr Ser Ser Thr Glu Gly Ser Gly Gly
145                 150                 155                 160

Arg Ile Thr Phe Asn Val Asp Leu Asn Ser Val Phe Leu Arg Val Leu
                165                 170                 175

Asp Asp Glu Asp Ser Asp Asp Leu Glu Ala Pro Leu Met Leu Ser Ser
            180                 185                 190

His Leu Glu Glu Met Val Asp Pro Glu Asp Pro Asp Asn Val Gln Ser
        195                 200                 205

Asn His Leu Leu Ala Ser Gly Glu Gly Thr Gln Pro Thr Phe Pro Ser
    210                 215                 220

Pro Ser Ser Glu Gly Leu Trp Ser Glu Asp Ala Pro Ser Asp Gln Ser
225                 230                 235                 240

Asp Thr Ser Glu Ser Asp Val Asp Leu Gly Asp Gly Tyr Ile Met Arg
                245                 250                 255


<210>  139
<211>  221
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  IFNLR1(300-520) tyrosine kinase effector domains

<400>  139

Arg Gly Val Arg Pro Thr Pro Arg Val Arg Ala Pro Ala Thr Gln Gln
1               5                   10                  15
```

```
Thr Arg Trp Lys Lys Asp Leu Ala Glu Asp Glu Glu Glu Glu Asp Glu
            20                  25                  30

Glu Asp Thr Glu Asp Gly Val Ser Phe Gln Pro Tyr Ile Glu Pro Pro
        35                  40                  45

Ser Phe Leu Gly Gln Glu His Gln Ala Pro Gly His Ser Glu Ala Gly
    50                  55                  60

Gly Val Asp Ser Gly Arg Pro Arg Ala Pro Leu Val Pro Ser Glu Gly
65                  70                  75                  80

Ser Ser Ala Trp Asp Ser Ser Asp Arg Ser Trp Ala Ser Thr Val Asp
                85                  90                  95

Ser Ser Trp Asp Arg Ala Gly Ser Ser Gly Tyr Leu Ala Glu Lys Gly
            100                 105                 110

Pro Gly Gln Gly Pro Gly Gly Asp Gly His Gln Glu Ser Leu Pro Pro
        115                 120                 125

Pro Glu Phe Ser Lys Asp Ser Gly Phe Leu Glu Glu Leu Pro Glu Asp
    130                 135                 140

Asn Leu Ser Ser Trp Ala Thr Trp Gly Thr Leu Pro Pro Glu Pro Asn
145                 150                 155                 160

Leu Val Pro Gly Gly Pro Pro Val Ser Leu Gln Thr Leu Thr Phe Cys
                165                 170                 175

Trp Glu Ser Ser Pro Glu Glu Glu Glu Glu Ala Arg Glu Ser Glu Ile
            180                 185                 190

Glu Asp Ser Asp Ala Gly Ser Trp Gly Ala Glu Ser Thr Gln Arg Thr
        195                 200                 205

Glu Asp Arg Gly Arg Thr Leu Gly His Tyr Met Ala Arg
    210                 215                 220
```

<210> 140
<211> 35

<212> PRT
<213> Artificial Sequence

<220>
<223> Common Gamma Chain(335-369) tyrosine kinase effector domains

<400> 140

Ile Pro Pro Lys Gly Gly Ala Leu Gly Glu Gly Pro Gly Ala Ser Pro
1   5   10   15

Cys Asn Gln His Ser Pro Tyr Trp Ala Pro Pro Cys Tyr Thr Leu Lys
            20   25   30

Pro Glu Thr
        35

<210> 141
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> IL9R(356-521) tyrosine kinase effector domains

<400> 141

Thr Ala Leu Leu Thr Cys Gly Pro Ala Arg Pro Trp Lys Ser Val Ala
1   5   10   15

Leu Glu Glu Glu Gln Glu Gly Pro Gly Thr Arg Leu Pro Gly Asn Leu
            20   25   30

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

Thr Leu Ala Tyr Leu Pro Gln Glu Asp Trp Ala Pro Thr Ser Leu Thr
    50   55   60

Arg Pro Ala Pro Pro Asp Ser Glu Gly Ser Arg Ser Ser Ser Ser Ser
65   70   75   80

Ser Ser Ser Asn Asn Asn Asn Tyr Cys Ala Leu Gly Cys Tyr Gly Gly
                85   90   95

```
Trp His Leu Ser Ala Leu Pro Gly Asn Thr Gln Ser Ser Gly Pro Ile
            100                 105                 110

Pro Ala Leu Ala Cys Gly Leu Ser Cys Asp His Gln Gly Leu Glu Thr
        115                 120                 125

Gln Gln Gly Val Ala Trp Val Leu Ala Gly His Cys Gln Arg Pro Gly
    130                 135                 140

Leu His Glu Asp Leu Gln Gly Met Leu Leu Pro Ser Val Leu Ser Lys
145                 150                 155                 160

Ala Arg Ser Trp Thr Phe
                165
```

<210> 142
<211> 217
<212> PRT
<213> Artificial Sequence

<220>
<223> IL21R(322-538) tyrosine kinase effector domains

<400> 142

```
Pro Arg Ser Pro Ala Lys Arg Leu Gln Leu Thr Glu Leu Gln Glu Pro
1               5                   10                  15

Ala Glu Leu Val Glu Ser Asp Gly Val Pro Lys Pro Ser Phe Trp Pro
            20                  25                  30

Thr Ala Gln Asn Ser Gly Gly Ser Ala Tyr Ser Glu Glu Arg Asp Arg
        35                  40                  45

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

Gly Pro Cys Thr Trp Pro Cys Ser Cys Glu Asp Asp Gly Tyr Pro Ala
65                  70                  75                  80

Leu Asp Leu Asp Ala Gly Leu Glu Pro Ser Pro Gly Leu Glu Asp Pro
                85                  90                  95
```

```
Leu Leu Asp Ala Gly Thr Thr Val Leu Ser Cys Gly Cys Val Ser Ala
            100                 105                 110


Gly Ser Pro Gly Leu Gly Gly Pro Leu Gly Ser Leu Leu Asp Arg Leu
        115                 120                 125


Lys Pro Pro Leu Ala Asp Gly Glu Asp Trp Ala Gly Gly Leu Pro Trp
    130                 135                 140


Gly Gly Arg Ser Pro Gly Gly Val Ser Glu Ser Glu Ala Gly Ser Pro
145                 150                 155                 160


Leu Ala Gly Leu Asp Met Asp Thr Phe Asp Ser Gly Phe Val Gly Ser
                165                 170                 175


Asp Cys Ser Ser Pro Val Glu Cys Asp Phe Thr Ser Pro Gly Asp Glu
            180                 185                 190


Gly Pro Pro Arg Ser Tyr Leu Arg Gln Trp Val Val Ile Pro Pro Pro
        195                 200                 205


Leu Ser Ser Pro Gly Pro Gln Ala Ser
    210                 215


<210>  143
<211>  286
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  GHR(353-638) tyrosine kinase effector domains

<400>  143

Pro Asp Glu Lys Thr Glu Glu Ser Asp Thr Asp Arg Leu Leu Ser Ser
1               5                   10                  15


Asp His Glu Lys Ser His Ser Asn Leu Gly Val Lys Asp Gly Asp Ser
            20                  25                  30


Gly Arg Thr Ser Cys Cys Glu Pro Asp Ile Leu Glu Thr Asp Phe Asn
        35                  40                  45
```

```
Ala Asn Asp Ile His Glu Gly Thr Ser Glu Val Ala Gln Pro Gln Arg
    50                  55                  60

Leu Lys Gly Glu Ala Asp Leu Leu Cys Leu Asp Gln Lys Asn Gln Asn
65                  70                  75                  80

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

Ile Gln Ala Glu Lys Asn Lys Pro Gln Pro Leu Pro Thr Glu Gly Ala
            100                 105                 110

Glu Ser Thr His Gln Ala Ala His Ile Gln Leu Ser Asn Pro Ser Ser
        115                 120                 125

Leu Ser Asn Ile Asp Phe Tyr Ala Gln Val Ser Asp Ile Thr Pro Ala
    130                 135                 140

Gly Ser Val Val Leu Ser Pro Gly Gln Lys Asn Lys Ala Gly Met Ser
145                 150                 155                 160

Gln Cys Asp Met His Pro Glu Met Val Ser Leu Cys Gln Glu Asn Phe
                165                 170                 175

Leu Met Asp Asn Ala Tyr Phe Cys Glu Ala Asp Ala Lys Lys Cys Ile
            180                 185                 190

Pro Val Ala Pro His Ile Lys Val Glu Ser His Ile Gln Pro Ser Leu
        195                 200                 205

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

Gly Arg Pro Gly Thr Gly Glu His Val Pro Gly Ser Glu Met Pro Val
225                 230                 235                 240

Pro Asp Tyr Thr Ser Ile His Ile Val Gln Ser Pro Gln Gly Leu Ile
                245                 250                 255

Leu Asn Ala Thr Ala Leu Pro Leu Pro Asp Lys Glu Phe Leu Ser Ser
            260                 265                 270
```

Cys Gly Tyr Val Ser Thr Asp Gln Leu Asn Lys Ile Met Pro
275 280 285

<210> 144
<211> 170
<212> PRT
<213> Artificial Sequence

<220>
<223> EpoR(339-508) tyrosine kinase effector domains

<400> 144

Trp Gly Thr Met Gln Ala Val Glu Pro Gly Thr Asp Asp Glu Gly Pro
1 5 10 15

Leu Leu Glu Pro Val Gly Ser Glu His Ala Gln Asp Thr Tyr Leu Val
20 25 30

Leu Asp Lys Trp Leu Leu Pro Arg Asn Pro Pro Ser Glu Asp Leu Pro
35 40 45

Gly Pro Gly Gly Ser Val Asp Ile Val Ala Met Asp Glu Gly Ser Glu
50 55 60

Ala Ser Ser Cys Ser Ser Ala Leu Ala Ser Lys Pro Ser Pro Glu Gly
65 70 75 80

Ala Ser Ala Ala Ser Phe Glu Tyr Thr Ile Leu Asp Pro Ser Ser Gln
85 90 95

Leu Leu Arg Pro Trp Thr Leu Cys Pro Glu Leu Pro Pro Thr Pro Pro
100 105 110

His Leu Lys Tyr Leu Tyr Leu Val Val Ser Asp Ser Gly Ile Ser Thr
115 120 125

Asp Tyr Ser Ser Gly Asp Ser Gln Gly Ala Gln Gly Gly Leu Ser Asp
130 135 140

Gly Pro Tyr Ser Asn Pro Tyr Glu Asn Ser Leu Ile Pro Ala Ala Glu
145 150 155 160

```
Pro Leu Pro Pro Ser Tyr Val Ala Cys Ser
                165                 170


<210>  145
<211>  203
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  murine IL2Rb(337-539) tyrosine kinase effector domains

<400>  145

Ala Val Gln Leu Leu Leu Leu Gln Lys Asp Ser Ala Pro Leu Pro Ser
1               5                   10                  15


Pro Ser Gly His Ser Gln Ala Ser Cys Phe Thr Asn Gln Gly Tyr Phe
            20                  25                  30


Phe Phe His Leu Pro Asn Ala Leu Glu Ile Glu Ser Cys Gln Val Tyr
        35                  40                  45


Phe Thr Tyr Asp Pro Cys Val Glu Glu Glu Val Glu Glu Asp Gly Ser
    50                  55                  60


Arg Leu Pro Glu Gly Ser Pro His Pro Pro Leu Leu Pro Leu Ala Gly
65                  70                  75                  80


Glu Gln Asp Asp Tyr Cys Ala Phe Pro Pro Arg Asp Asp Leu Leu Leu
                85                  90                  95


Phe Ser Pro Ser Leu Ser Thr Pro Asn Thr Ala Tyr Gly Gly Ser Arg
            100                 105                 110


Ala Pro Glu Glu Arg Ser Pro Leu Ser Leu His Glu Gly Leu Pro Ser
        115                 120                 125


Leu Ala Ser Arg Asp Leu Met Gly Leu Gln Arg Pro Leu Glu Arg Met
    130                 135                 140


Pro Glu Gly Asp Gly Glu Gly Leu Ser Ala Asn Ser Ser Gly Glu Gln
145                 150                 155                 160
```

Ala Ser Val Pro Glu Gly Asn Leu His Gly Gln Asp Gln Asp Arg Gly
165 170 175

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

Glu Leu Gln Ala Gln Asp Ser Val His Leu Ile
195 200

<210> 146
<211> 144
<212> PRT
<213> Artificial Sequence

<220>
<223> murine IL7Ra(316-459) tyrosine kinase effector domains

<400> 146

Ala Arg Asp Glu Val Glu Ser Phe Leu Pro Asn Asp Leu Pro Ala Gln
1 5 10 15

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

Asn Arg Ser Pro Glu Thr Ser Val Ser Pro Pro Glu Thr Val Arg Arg
35 40 45

Glu Ser Pro Leu Arg Cys Leu Ala Arg Asn Leu Ser Thr Cys Asn Ala
50 55 60

Pro Pro Leu Leu Ser Ser Arg Ser Pro Asp Tyr Arg Asp Gly Asp Arg
65 70 75 80

Asn Arg Pro Pro Val Tyr Gln Asp Leu Leu Pro Asn Ser Gly Asn Thr
85 90 95

Asn Val Pro Val Pro Val Pro Gln Pro Leu Pro Phe Gln Ser Gly Ile
100 105 110

Leu Ile Pro Val Ser Gln Arg Gln Pro Ile Ser Thr Ser Ser Val Leu
115 120 125

Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln Asn Lys
130 135 140

<210> 147
<211> 231
<212> PRT
<213> Artificial Sequence

<220>
<223> EGFR(955-1186) tyrosine kinase effector domains

<400> 147

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

Asn Phe Tyr Arg Ala Leu Met Asp Glu Glu Asp Met Asp Asp Val Val
20 25 30

Asp Ala Asp Glu Tyr Leu Ile Pro Gln Gln Gly Phe Phe Ser Ser Pro
35 40 45

Ser Thr Ser Arg Thr Pro Leu Leu Ser Ser Leu Ser Ala Thr Ser Asn
50 55 60

Asn Ser Thr Val Ala Cys Ile Asp Arg Asn Gly Leu Gln Ser Cys Pro
65 70 75 80

Ile Lys Glu Asp Ser Phe Leu Gln Arg Tyr Ser Ser Asp Pro Thr Gly
85 90 95

Ala Leu Thr Glu Asp Ser Ile Asp Asp Thr Phe Leu Pro Val Pro Glu
100 105 110

Tyr Ile Asn Gln Ser Val Pro Lys Arg Pro Ala Gly Ser Val Gln Asn
115 120 125

Pro Val Tyr His Asn Gln Pro Leu Asn Pro Ala Pro Ser Arg Asp Pro
130 135 140

His Tyr Gln Asp Pro His Ser Thr Ala Val Gly Asn Pro Glu Tyr Leu
145 150 155 160

Asn Thr Val Gln Pro Thr Cys Val Asn Ser Thr Phe Asp Ser Pro Ala
165 170 175

His Trp Ala Gln Lys Gly Ser His Gln Ile Ser Leu Asp Asn Pro Asp
180 185 190

Tyr Gln Gln Asp Phe Phe Pro Lys Glu Ala Lys Pro Asn Gly Ile Phe
195 200 205

Lys Gly Ser Thr Ala Glu Asn Ala Glu Tyr Leu Arg Val Ala Pro Gln
210 215 220

Ser Ser Glu Phe Ile Gly Ala
225 230

<210> 148
<211> 218
<212> PRT
<213> Artificial Sequence

<220>
<223> EGFR(955-1186;Y974F,d1045-1057) tyrosine kinase effector domains

<400> 148

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

Asn Phe Phe Arg Ala Leu Met Asp Glu Glu Asp Met Asp Asp Val Val
20 25 30

Asp Ala Asp Glu Tyr Leu Ile Pro Gln Gln Gly Phe Phe Ser Ser Pro
35 40 45

Ser Thr Ser Arg Thr Pro Leu Leu Ser Ser Leu Ser Ala Thr Ser Asn
50 55 60

Asn Ser Thr Val Ala Cys Ile Asp Arg Asn Gly Leu Gln Ser Cys Pro
65 70 75 80

Ile Lys Glu Asp Ser Phe Leu Gln Arg Ile Asp Asp Thr Phe Leu Pro
85 90 95

```
Val Pro Glu Tyr Ile Asn Gln Ser Val Pro Lys Arg Pro Ala Gly Ser
            100                 105                 110


Val Gln Asn Pro Val Tyr His Asn Gln Pro Leu Asn Pro Ala Pro Ser
        115                 120                 125


Arg Asp Pro His Tyr Gln Asp Pro His Ser Thr Ala Val Gly Asn Pro
    130                 135                 140


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


Ser Pro Ala His Trp Ala Gln Lys Gly Ser His Gln Ile Ser Leu Asp
                165                 170                 175


Asn Pro Asp Tyr Gln Gln Asp Phe Phe Pro Lys Glu Ala Lys Pro Asn
            180                 185                 190


Gly Ile Phe Lys Gly Ser Thr Ala Glu Asn Ala Glu Tyr Leu Arg Val
        195                 200                 205


Ala Pro Gln Ser Ser Glu Phe Ile Gly Ala
    210                 215


<210>  149
<211>  54
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  EGFR(955-1009;Y974F) tyrosine kinase effector domains

<400>  149

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


Asn Phe Phe Arg Ala Leu Met Asp Glu Glu Asp Met Asp Asp Val Val
            20                  25                  30


Asp Ala Asp Glu Tyr Leu Ile Pro Gln Gln Gly Phe Phe Ser Ser Pro
        35                  40                  45
```

Ser Thr Ser Arg Thr Pro
    50

<210> 150
<211> 54
<212> PRT
<213> Artificial Sequence

<220>
<223> EGFR(1019-1085) tyrosine kinase effector domains

<400> 150

Asn Asn Ser Thr Val Ala Cys Ile Asp Arg Asn Gly Leu Gln Ser Cys
1   5   10   15

Pro Ile Lys Glu Asp Ser Phe Leu Gln Arg Ile Asp Asp Thr Phe Leu
            20   25   30

Pro Val Pro Glu Tyr Ile Asn Gln Ser Val Pro Lys Arg Pro Ala Gly
        35   40   45

Ser Val Gln Asn Pro Val
    50

<210> 151
<211> 54
<212> PRT
<213> Artificial Sequence

<220>
<223> EGFR(1037-1103;Y1068/1101F,d1045-1057) tyrosine kinase effector domains

<400> 151

Lys Glu Asp Ser Phe Leu Gln Arg Ile Asp Asp Thr Phe Leu Pro Val
1   5   10   15

Pro Glu Phe Ile Asn Gln Ser Val Pro Lys Arg Pro Ala Gly Ser Val
            20   25   30

Gln Asn Pro Val Tyr His Asn Gln Pro Leu Asn Pro Ala Pro Ser Arg
        35   40   45

Asp Pro His Phe Gln Asp
    50

<210> 152
<211> 54
<212> PRT
<213> Artificial Sequence

<220>
<223> EGFR(1066-1118;Y1068/1086F) tyrosine kinase effector domains

<400> 152

Val Pro Glu Phe Ile Asn Gln Ser Val Pro Lys Arg Pro Ala Gly Ser
1   5   10   15

Val Gln Asn Pro Val Phe His Asn Gln Pro Leu Asn Pro Ala Pro Ser
            20   25   30

Arg Asp Pro His Tyr Gln Asp Pro His Ser Thr Ala Val Gly Asn Pro
        35   40   45

Glu Tyr Leu Asn Thr Val
    50

<210> 153
<211> 54
<212> PRT
<213> Artificial Sequence

<220>
<223> EGFR(1122-1165) tyrosine kinase effector domains

<400> 153

Pro Glu Tyr Leu Asn Thr Val Gln Pro Thr Cys Val Asn Ser Thr Phe
1   5   10   15

Asp Ser Pro Ala His Trp Ala Gln Lys Gly Ser His Gln Ile Ser Leu
            20   25   30

Asp Asn Pro Asp Tyr Gln Gln Asp Phe Phe Pro Lys Glu Ala Lys Pro
        35   40   45

Asn Gly Ile Phe Lys Gly
    50

<210> 154
<211> 54
<212> PRT
<213> Artificial Sequence

<220>
<223> EGFR(1133-1186;Y1148F) tyrosine kinase effector domains

<400> 154

Trp Ala Gln Lys Gly Ser His Gln Ile Ser Leu Asp Asn Pro Asp Phe
1   5   10   15

Gln Gln Asp Phe Phe Pro Lys Glu Ala Lys Pro Asn Gly Ile Phe Lys
            20   25   30

Gly Ser Thr Ala Glu Asn Ala Glu Tyr Leu Arg Val Ala Pro Gln Ser
        35   40   45

Ser Glu Phe Ile Gly Ala
    50

<210> 155
<211> 51
<212> PRT
<213> Artificial Sequence

<220>
<223> IL12Rb2(775-825) tyrosine kinase effector domains

<400> 155

Ser Asp Pro Lys Pro Glu Asn Pro Ala Cys Pro Trp Thr Val Leu Pro
1   5   10   15

Ala Gly Asp Leu Pro Thr His Asp Gly Tyr Leu Pro Ser Asn Ile Asp
            20   25   30

Asp Leu Pro Ser His Glu Ala Pro Leu Ala Asp Ser Leu Glu Glu Leu
        35   40   45

Glu Pro Gln
    50

<210> 156
<211> 41
<212> PRT
<213> Artificial Sequence

<220>
<223> IL7R(376-416) tyrosine kinase effector domains

<400> 156

Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg
1 5 10 15

Glu Ser Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu Ser
20 25 30

Leu Gly Thr Thr Asn Ser Thr Leu Pro
35 40

<210> 157
<211> 36
<212> PRT
<213> Artificial Sequence

<220>
<223> IL7R(424-459) tyrosine kinase effector domains

<400> 157

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

Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser Phe
20 25 30

Tyr Gln Asn Gln
35

<210> 158
<211> 68
<212> PRT
<213> Artificial Sequence

<220>
<223> IL7R(376-416,424-459) tyrosine kinase effector domains

<400> 158

```
Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg
1               5                   10                  15


Glu Ser Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu Ser
            20                  25                  30


Leu Gly Thr Thr Asn Ser Thr Leu Pro Gln Gly Gln Pro Ile Leu Thr
        35                  40                  45


Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser Phe
    50                  55                  60


Tyr Gln Asn Gln
65
```

<210> 159
<211> 36
<212> PRT
<213> Artificial Sequence

<220>
<223> IL7R(424-459;Y456F) tyrosine kinase effector domains

<400> 159

```
Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu Thr
1               5                   10                  15


Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser Phe
            20                  25                  30


Phe Gln Asn Gln
        35
```

<210> 160
<211> 68
<212> PRT
<213> Artificial Sequence

<220>
<223> IL7R(376-416,424-459,Y456F) tyrosine kinase effector domains

<400> 160

```
Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg
1               5                   10                  15
```

Glu Ser Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu Ser
            20   25   30

Leu Gly Thr Thr Asn Ser Thr Leu Pro Gln Gly Gln Pro Ile Leu Thr
        35   40   45

Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser Phe
    50   55   60

Phe Gln Asn Gln
65

<210> 161
<211> 75
<212> PRT
<213> Artificial Sequence

<220>
<223> IL2small(393-433) tyrosine kinase effector domains

<400> 161

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

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

Asp Asp Leu Leu Leu Phe Ser Pro Ser Gly Gln Gly Glu Phe Arg Ala
        35   40   45

Leu Asn Ala Arg Leu Pro Leu Asn Thr Asp Ala Tyr Leu Ser Leu Gln
    50   55   60

Glu Leu Gln Gly Gln Asp Pro Thr His Leu Val
65   70   75

<210> 162
<211> 34
<212> PRT
<213> Artificial Sequence

<220>

<223> IL2small(518-551) tyrosine kinase effector domains

<400> 162

Gly Gln Gly Glu Phe Arg Ala Leu Asn Ala Arg Leu Pro Leu Asn Thr
1   5   10   15

Asp Ala Tyr Leu Ser Leu Gln Glu Leu Gln Gly Gln Asp Pro Thr His
            20   25   30

Leu Val

<210> 163
<211> 82
<212> PRT
<213> Artificial Sequence

<220>
<223> IL2small(339-379,393-433) tyrosine kinase effector domains

<400> 163

Gln Gln Asp Lys Val Pro Glu Pro Ala Ser Leu Ser Ser Asn His Ser
1   5   10   15

Leu Thr Ser Cys Phe Thr Asn Gln Gly Tyr Phe Phe Phe His Leu Pro
            20   25   30

Asp Ala Leu Glu Ile Glu Ala Cys Gln Asp Glu Gly Val Ala Gly Ala
        35   40   45

Pro Thr Gly Ser Ser Pro Gln Pro Leu Gln Pro Leu Ser Gly Glu Asp
    50   55   60

Asp Ala Tyr Cys Thr Phe Pro Ser Arg Asp Asp Leu Leu Leu Phe Ser
65   70   75   80

Pro Ser

<210> 164
<211> 75
<212> PRT
<213> Artificial Sequence

<220>
<223> IL2small(339-379,518-551) tyrosine kinase effector domains

<400> 164

Gln Gln Asp Lys Val Pro Glu Pro Ala Ser Leu Ser Ser Asn His Ser
1   5   10   15

Leu Thr Ser Cys Phe Thr Asn Gln Gly Tyr Phe Phe Phe His Leu Pro
            20   25   30

Asp Ala Leu Glu Ile Glu Ala Cys Gln Gly Gln Gly Glu Phe Arg Ala
        35   40   45

Leu Asn Ala Arg Leu Pro Leu Asn Thr Asp Ala Tyr Leu Ser Leu Gln
    50   55   60

Glu Leu Gln Gly Gln Asp Pro Thr His Leu Val
65   70   75

<210> 165
<211> 75
<212> PRT
<213> Artificial Sequence

<220>
<223> IL2small(393-433,518-551) tyrosine kinase effector domains

<400> 165

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

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

Asp Asp Leu Leu Leu Phe Ser Pro Ser Gly Gln Gly Glu Phe Arg Ala
        35   40   45

Leu Asn Ala Arg Leu Pro Leu Asn Thr Asp Ala Tyr Leu Ser Leu Gln
    50   55   60

Glu Leu Gln Gly Gln Asp Pro Thr His Leu Val
65   70   75

<210> 166
<211> 116
<212> PRT
<213> Artificial Sequence

<220>
<223> IL2small(339-379,393-433,518-551) tyrosine kinase effector domains

<400> 166

Gln Gln Asp Lys Val Pro Glu Pro Ala Ser Leu Ser Ser Asn His Ser
1 5 10 15

Leu Thr Ser Cys Phe Thr Asn Gln Gly Tyr Phe Phe Phe His Leu Pro
20 25 30

Asp Ala Leu Glu Ile Glu Ala Cys Gln Asp Glu Gly Val Ala Gly Ala
35 40 45

Pro Thr Gly Ser Ser Pro Gln Pro Leu Gln Pro Leu Ser Gly Glu Asp
50 55 60

Asp Ala Tyr Cys Thr Phe Pro Ser Arg Asp Asp Leu Leu Leu Phe Ser
65 70 75 80

Pro Ser Gly Gln Gly Glu Phe Arg Ala Leu Asn Ala Arg Leu Pro Leu
85 90 95

Asn Thr Asp Ala Tyr Leu Ser Leu Gln Glu Leu Gln Gly Gln Asp Pro
100 105 110

Thr His Leu Val
115

<210> 167
<211> 43
<212> PRT
<213> Artificial Sequence

<220>
<223> IFNAR2small(310-352) tyrosine kinase effector domains

<400> 167

```
Lys Lys Lys Val Trp Asp Tyr Asn Tyr Asp Asp Glu Ser Asp Ser Asp
1               5                   10                  15


Thr Glu Ala Ala Pro Arg Thr Ser Gly Gly Gly Tyr Thr Met His Gly
            20                  25                  30


Leu Thr Val Arg Pro Leu Gly Gln Ala Ser Ala
        35                  40


<210>  168
<211>  29
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  IFNAR2small(486-515) tyrosine kinase effector domains

<400>  168

Glu Gly Leu Trp Ser Glu Asp Ala Pro Ser Asp Gln Ser Asp Thr Ser
1               5                   10                  15


Glu Ser Asp Val Asp Leu Gly Asp Gly Tyr Ile Met Arg
            20                  25


<210>  169
<211>  72
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  IFNAR2small(310-352,486-515) tyrosine kinase effector domains

<400>  169

Lys Lys Lys Val Trp Asp Tyr Asn Tyr Asp Asp Glu Ser Asp Ser Asp
1               5                   10                  15


Thr Glu Ala Ala Pro Arg Thr Ser Gly Gly Gly Tyr Thr Met His Gly
            20                  25                  30


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


Glu Asp Ala Pro Ser Asp Gln Ser Asp Thr Ser Glu Ser Asp Val Asp
    50                  55                  60
```

Leu Gly Asp Gly Tyr Ile Met Arg
65 70

<210> 170
<211> 156
<212> PRT
<213> Artificial Sequence

<220>
<223> BLNK(53-208) tyrosine kinase effector domains

<400> 170

Ala Ser Glu Ser Pro Ala Asp Glu Glu Glu Gln Trp Ser Asp Asp Phe
1 5 10 15

Asp Ser Asp Tyr Glu Asn Pro Asp Glu His Ser Asp Ser Glu Met Tyr
20 25 30

Val Met Pro Ala Glu Glu Asn Ala Asp Asp Ser Tyr Glu Pro Pro Pro
35 40 45

Val Glu Gln Glu Thr Arg Pro Val His Pro Ala Leu Pro Phe Ala Arg
50 55 60

Gly Glu Tyr Ile Asp Asn Arg Ser Ser Gln Arg His Ser Pro Pro Phe
65 70 75 80

Ser Lys Thr Leu Pro Ser Lys Pro Ser Trp Pro Ser Glu Lys Ala Arg
85 90 95

Leu Thr Ser Thr Leu Pro Ala Leu Thr Ala Leu Gln Lys Pro Gln Val
100 105 110

Pro Pro Lys Pro Lys Gly Leu Leu Glu Asp Glu Ala Asp Tyr Val Val
115 120 125

Pro Val Glu Asp Asn Asp Glu Asn Tyr Ile His Pro Thr Glu Ser Ser
130 135 140

Ser Pro Pro Pro Glu Lys Ala Pro Met Val Asn Arg
145 150 155

<210> 171
<211> 156
<212> PRT
<213> Artificial Sequence

<220>
<223> BLNK(53-208;Y72F) tyrosine kinase effector domains

<400> 171

Ala Ser Glu Ser Pro Ala Asp Glu Glu Glu Gln Trp Ser Asp Asp Phe
1 5 10 15

Asp Ser Asp Phe Glu Asn Pro Asp Glu His Ser Asp Ser Glu Met Tyr
20 25 30

Val Met Pro Ala Glu Glu Asn Ala Asp Asp Ser Tyr Glu Pro Pro Pro
35 40 45

Val Glu Gln Glu Thr Arg Pro Val His Pro Ala Leu Pro Phe Ala Arg
50 55 60

Gly Glu Tyr Ile Asp Asn Arg Ser Ser Gln Arg His Ser Pro Pro Phe
65 70 75 80

Ser Lys Thr Leu Pro Ser Lys Pro Ser Trp Pro Ser Glu Lys Ala Arg
85 90 95

Leu Thr Ser Thr Leu Pro Ala Leu Thr Ala Leu Gln Lys Pro Gln Val
100 105 110

Pro Pro Lys Pro Lys Gly Leu Leu Glu Asp Glu Ala Asp Tyr Val Val
115 120 125

Pro Val Glu Asp Asn Asp Glu Asn Tyr Ile His Pro Thr Glu Ser Ser
130 135 140

Ser Pro Pro Pro Glu Lys Ala Pro Met Val Asn Arg
145 150 155

<210> 172
<211> 156

<212> PRT
<213> Artificial Sequence

<220>
<223> BLNK(53-208;Y72F,Y96F) tyrosine kinase effector domains

<400> 172

Ala Ser Glu Ser Pro Ala Asp Glu Glu Glu Gln Trp Ser Asp Asp Phe
1   5   10   15

Asp Ser Asp Phe Glu Asn Pro Asp Glu His Ser Asp Ser Glu Met Tyr
            20   25   30

Val Met Pro Ala Glu Glu Asn Ala Asp Asp Ser Phe Glu Pro Pro Pro
        35   40   45

Val Glu Gln Glu Thr Arg Pro Val His Pro Ala Leu Pro Phe Ala Arg
    50   55   60

Gly Glu Tyr Ile Asp Asn Arg Ser Ser Gln Arg His Ser Pro Pro Phe
65   70   75   80

Ser Lys Thr Leu Pro Ser Lys Pro Ser Trp Pro Ser Glu Lys Ala Arg
                85   90   95

Leu Thr Ser Thr Leu Pro Ala Leu Thr Ala Leu Gln Lys Pro Gln Val
            100   105   110

Pro Pro Lys Pro Lys Gly Leu Leu Glu Asp Glu Ala Asp Tyr Val Val
        115   120   125

Pro Val Glu Asp Asn Asp Glu Asn Tyr Ile His Pro Thr Glu Ser Ser
    130   135   140

Ser Pro Pro Pro Glu Lys Ala Pro Met Val Asn Arg
145   150   155

<210> 173
<211> 170
<212> PRT
<213> Artificial Sequence

<220>

<223> EpoR(339-508) tyrosine kinase effector domains

<400> 173

```
Trp Gly Thr Met Gln Ala Val Glu Pro Gly Thr Asp Asp Glu Gly Pro
1               5                  10                  15


Leu Leu Glu Pro Val Gly Ser Glu His Ala Gln Asp Thr Tyr Leu Val
            20                  25                  30


Leu Asp Lys Trp Leu Leu Pro Arg Asn Pro Pro Ser Glu Asp Leu Pro
        35                  40                  45


Gly Pro Gly Gly Ser Val Asp Ile Val Ala Met Asp Glu Gly Ser Glu
    50                  55                  60


Ala Ser Ser Cys Ser Ser Ala Leu Ala Ser Lys Pro Ser Pro Glu Gly
65                  70                  75                  80


Ala Ser Ala Ala Ser Phe Glu Tyr Thr Ile Leu Asp Pro Ser Ser Gln
                85                  90                  95


Leu Leu Arg Pro Trp Thr Leu Cys Pro Glu Leu Pro Pro Thr Pro Pro
            100                 105                 110


His Leu Lys Tyr Leu Tyr Leu Val Val Ser Asp Ser Gly Ile Ser Thr
        115                 120                 125


Asp Tyr Ser Ser Gly Asp Ser Gln Gly Ala Gln Gly Gly Leu Ser Asp
    130                 135                 140


Gly Pro Tyr Ser Asn Pro Tyr Glu Asn Ser Leu Ile Pro Ala Ala Glu
145                 150                 155                 160


Pro Leu Pro Pro Ser Tyr Val Ala Cys Ser
                165                 170
```

<210> 174
<211> 149
<212> PRT
<213> Artificial Sequence

<220>

<223> IL12Rb2(714-862) tyrosine kinase effector domains

<400> 174

```
Val Thr Pro Val Phe Arg His Pro Pro Cys Ser Asn Trp Pro Gln Arg
1               5                  10                  15


Glu Lys Gly Ile Gln Gly His Gln Ala Ser Glu Lys Asp Met Met His
            20                  25                  30


Ser Ala Ser Ser Pro Pro Pro Pro Arg Ala Leu Gln Ala Glu Ser Arg
        35                  40                  45


Gln Leu Val Asp Leu Tyr Lys Val Leu Glu Ser Arg Gly Ser Asp Pro
    50                  55                  60


Lys Pro Glu Asn Pro Ala Cys Pro Trp Thr Val Leu Pro Ala Gly Asp
65                  70                  75                  80


Leu Pro Thr His Asp Gly Tyr Leu Pro Ser Asn Ile Asp Asp Leu Pro
                85                  90                  95


Ser His Glu Ala Pro Leu Ala Asp Ser Leu Glu Glu Leu Glu Pro Gln
            100                 105                 110


His Ile Ser Leu Ser Val Phe Pro Ser Ser Ser Leu His Pro Leu Thr
        115                 120                 125


Phe Ser Cys Gly Asp Lys Leu Thr Leu Asp Gln Leu Lys Met Arg Cys
    130                 135                 140


Asp Ser Leu Met Leu
145
```

<210> 175
<211> 40
<212> PRT
<213> Artificial Sequence

<220>
<223> IL12Rb1(622-662) tyrosine kinase effector domains

<400> 175

```
Trp Asp Lys Gly Glu Arg Thr Glu Pro Leu Glu Lys Thr Glu Leu Pro
1               5                   10                  15


Glu Gly Ala Pro Glu Leu Ala Leu Asp Thr Glu Leu Ser Leu Glu Asp
            20                  25                  30


Gly Asp Arg Cys Lys Ala Lys Met
        35                  40


<210>  176
<211>  275
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  IL10R1(304-578) tyrosine kinase effector domains

<400>  176

Val Ser Pro Glu Leu Lys Asn Leu Asp Leu His Gly Ser Thr Asp Ser
1               5                   10                  15


Gly Phe Gly Ser Thr Lys Pro Ser Leu Gln Thr Glu Glu Pro Gln Phe
            20                  25                  30


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


Glu Pro Pro Val Leu Gly Asp Ser Cys Ser Ser Gly Ser Ser Asn Ser
    50                  55                  60


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


Gly Pro Thr Trp Glu Gln Gln Val Gly Ser Asn Ser Arg Gly Gln Asp
                85                  90                  95


Asp Ser Gly Ile Asp Leu Val Gln Asn Ser Glu Gly Arg Ala Gly Asp
            100                 105                 110


Thr Gln Gly Gly Ser Ala Leu Gly His His Ser Pro Pro Glu Pro Glu
        115                 120                 125
```

```
Val Pro Gly Glu Glu Asp Pro Ala Ala Val Ala Phe Gln Gly Tyr Leu
    130                 135                 140

Arg Gln Thr Arg Cys Ala Glu Glu Lys Ala Thr Lys Thr Gly Cys Leu
145                 150                 155                 160

Glu Glu Glu Ser Pro Leu Thr Asp Gly Leu Gly Pro Lys Phe Gly Arg
                165                 170                 175

Cys Leu Val Asp Glu Ala Gly Leu His Pro Pro Ala Leu Ala Lys Gly
            180                 185                 190

Tyr Leu Lys Gln Asp Pro Leu Glu Met Thr Leu Ala Ser Ser Gly Ala
        195                 200                 205

Pro Thr Gly Gln Trp Asn Gln Pro Thr Glu Glu Trp Ser Leu Leu Ala
    210                 215                 220

Leu Ser Ser Cys Ser Asp Leu Gly Ile Ser Asp Trp Ser Phe Ala His
225                 230                 235                 240

Asp Leu Ala Pro Leu Gly Cys Val Ala Ala Pro Gly Gly Leu Leu Gly
                245                 250                 255

Ser Phe Asn Ser Asp Leu Val Thr Leu Pro Leu Ile Ser Ser Leu Gln
            260                 265                 270

Ser Ser Glu
        275
```

<210> 177
<211> 461
<212> PRT
<213> Artificial Sequence

<220>
<223> Myristoyl-Myd88-CD40-FKBP(F36V)x2 (GoCART) construct

<400> 177

```
Met Gly Ser Ser Lys Ser Lys Pro Lys Asp Pro Ser Gln Arg Met Ala
1               5                   10                  15
```

```
Ala Gly Gly Pro Gly Ala Gly Ser Ala Ala Pro Val Ser Ser Thr Ser
            20                  25                  30

Ser Leu Pro Leu Ala Ala Leu Asn Met Arg Val Arg Arg Arg Leu Ser
        35                  40                  45

Leu Phe Leu Asn Val Arg Thr Gln Val Ala Ala Asp Trp Thr Ala Leu
    50                  55                  60

Ala Glu Glu Met Asp Phe Glu Tyr Leu Glu Ile Arg Gln Leu Glu Thr
65                  70                  75                  80

Gln Ala Asp Pro Thr Gly Arg Leu Leu Asp Ala Trp Gln Gly Arg Pro
                85                  90                  95

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

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

Lys Tyr Ile Leu Lys Gln Gln Gln Glu Glu Ala Glu Lys Pro Leu Gln
    130                 135                 140

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

Ile Thr Thr Leu Asp Asp Pro Leu Gly His Met Pro Glu Arg Phe Asp
                165                 170                 175

Ala Phe Ile Cys Tyr Cys Pro Ser Asp Ile Lys Lys Val Ala Lys Lys
            180                 185                 190

Pro Thr Asn Lys Ala Pro His Pro Lys Gln Glu Pro Gln Glu Ile Asn
        195                 200                 205

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

Thr Leu His Gly Cys Gln Pro Val Thr Gln Glu Asp Gly Lys Glu Ser
225                 230                 235                 240
```

```
Arg Ile Ser Val Gln Glu Arg Gln Gly Val Gln Val Glu Thr Ile Ser
                245                 250                 255

Pro Gly Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val
            260                 265                 270

His Tyr Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg
        275                 280                 285

Asp Arg Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile
    290                 295                 300

Arg Gly Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala
305                 310                 315                 320

Lys Leu Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro
                325                 330                 335

Gly Ile Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu
            340                 345                 350

Lys Leu Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr
        355                 360                 365

Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu
    370                 375                 380

Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe
385                 390                 395                 400

Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly
                405                 410                 415

Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro
            420                 425                 430

Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His
        435                 440                 445
```

Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu
    450   455   460

<210> 178
<211> 233
<212> PRT
<213> Artificial Sequence

<220>
<223> TagBFP construct

<400> 178

Met Ser Glu Leu Ile Lys Glu Asn Met His Met Lys Leu Tyr Met Glu
1   5   10   15

Gly Thr Val Asp Asn His His Phe Lys Cys Thr Ser Glu Gly Glu Gly
            20   25   30

Lys Pro Tyr Glu Gly Thr Gln Thr Met Arg Ile Lys Val Val Glu Gly
        35   40   45

Gly Pro Leu Pro Phe Ala Phe Asp Ile Leu Ala Thr Ser Phe Leu Tyr
    50   55   60

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

Lys Gln Ser Phe Pro Glu Gly Phe Thr Trp Glu Arg Val Thr Thr Tyr
                85   90   95

Glu Asp Gly Gly Val Leu Thr Ala Thr Gln Asp Thr Ser Leu Gln Asp
            100   105   110

Gly Cys Leu Ile Tyr Asn Val Lys Ile Arg Gly Val Asn Phe Thr Ser
        115   120   125

Asn Gly Pro Val Met Gln Lys Lys Thr Leu Gly Trp Glu Ala Phe Thr
    130   135   140

Glu Thr Leu Tyr Pro Ala Asp Gly Gly Leu Glu Gly Arg Asn Asp Met
145   150   155   160

```
Ala Leu Lys Leu Val Gly Gly Ser His Leu Ile Ala Asn Ile Lys Thr
                165                 170                 175


Thr Tyr Arg Ser Lys Lys Pro Ala Lys Asn Leu Lys Met Pro Gly Val
            180                 185                 190


Tyr Tyr Val Asp Tyr Arg Leu Glu Arg Ile Lys Glu Ala Asn Asn Glu
        195                 200                 205


Thr Tyr Val Glu Gln His Glu Val Ala Val Ala Arg Tyr Cys Asp Leu
    210                 215                 220


Pro Ser Lys Leu Gly His Lys Leu Asn
225                 230


<210>  179
<211>  13
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  V5 epitope tag

<400>  179

Lys Pro Ile Pro Asn Pro Leu Leu Gly Leu Asp Ser Thr
1               5                   10


<210>  180
<211>  246
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  2173 scFv domain

<400>  180

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


Ser Leu Arg Ile Ser Cys Lys Gly Ser Gly Phe Asn Ile Glu Asp Tyr
            20                  25                  30


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

```
Gly Arg Ile Asp Pro Glu Asn Asp Glu Thr Lys Tyr Gly Pro Ile Phe
    50                  55                  60

Gln Gly His Val Thr Ile Ser Ala Asp Thr Ser Ile Asn Thr Val Tyr
65                  70                  75                  80

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

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

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
        115                 120                 125

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

Leu Ala Val Ser Leu Gly Glu Arg Ala Thr Ile Asn Cys Lys Ser Ser
145                 150                 155                 160

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

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

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

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

Tyr Tyr Cys Trp Gln Gly Thr His Phe Pro Gly Thr Phe Gly Gly Gly
225                 230                 235                 240

Thr Lys Val Glu Ile Lys
                245
```

<210> 181
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> 26C8 scFv domain

<400> 181

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


Thr Leu Ser Leu Thr Cys Thr Val Ser Asp Asn Ser Ile Ser Asn Tyr
            20                  25                  30


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


Ala Tyr Ile Tyr Tyr Ser Gly Thr Thr Asn Tyr Asn Pro Ser Leu Lys
    50                  55                  60


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


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


Arg Val Phe His Trp Gly Phe Ala Phe Asp Ile Trp Gly Gln Gly Thr
            100                 105                 110


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


Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu
    130                 135                 140


Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln
145                 150                 155                 160


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

```
Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile
            180                 185                 190


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


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


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


Lys
```

<210> 182
<211> 69
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 hinge and transmembrane domain

<400> 182

```
Thr Thr Thr Pro Ala Pro Arg Pro Pro Thr Pro Ala Pro Thr Ile Ala
1               5                   10                  15


Ser Gln Pro Leu Ser Leu Arg Pro Glu Ala Cys Arg Pro Ala Ala Gly
            20                  25                  30


Gly Ala Val His Thr Arg Gly Leu Asp Phe Ala Cys Asp Ile Tyr Ile
        35                  40                  45


Trp Ala Pro Leu Ala Gly Thr Cys Gly Val Leu Leu Leu Ser Leu Val
    50                  55                  60


Ile Thr Leu Tyr Cys
65
```

<210> 183
<211> 42
<212> PRT
<213> Artificial Sequence

<220>
<223> 4-1BB intracellular signaling domain

<400> 183

Lys Arg Gly Arg Lys Lys Leu Leu Tyr Ile Phe Lys Gln Pro Phe Met
1   5   10   15

Arg Pro Val Gln Thr Thr Gln Glu Glu Asp Gly Cys Ser Cys Arg Phe
            20   25   30

Pro Glu Glu Glu Glu Gly Gly Cys Glu Leu
        35   40

<210> 184
<211> 112
<212> PRT
<213> Artificial Sequence

<220>
<223> CD3z intracellular signaling domain

<400> 184

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

Gln Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu Glu Tyr
            20   25   30

Asp Val Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu Met Gly Gly Lys
        35   40   45

Pro Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu Gln Lys
    50   55   60

Asp Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly Glu Arg
65   70   75   80

Arg Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly Leu Ser Thr Ala
                85   90   95

Thr Lys Asp Thr Tyr Asp Ala Leu His Met Gln Ala Leu Pro Pro Arg
            100   105   110

<210> 185
<211> 233
<212> PRT
<213> Artificial Sequence

<220>
<223> BFP domain

<400> 185

```
Met Ser Glu Leu Ile Lys Glu Asn Met His Met Lys Leu Tyr Met Glu
1               5                  10                  15


Gly Thr Val Asp Asn His His Phe Lys Cys Thr Ser Glu Gly Glu Gly
            20                  25                  30


Lys Pro Tyr Glu Gly Thr Gln Thr Met Arg Ile Lys Val Val Glu Gly
        35                  40                  45


Gly Pro Leu Pro Phe Ala Phe Asp Ile Leu Ala Thr Ser Phe Leu Tyr
    50                  55                  60


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


Lys Gln Ser Phe Pro Glu Gly Phe Thr Trp Glu Arg Val Thr Thr Tyr
                85                  90                  95


Glu Asp Gly Gly Val Leu Thr Ala Thr Gln Asp Thr Ser Leu Gln Asp
            100                 105                 110


Gly Cys Leu Ile Tyr Asn Val Lys Ile Arg Gly Val Asn Phe Thr Ser
        115                 120                 125


Asn Gly Pro Val Met Gln Lys Lys Thr Leu Gly Trp Glu Ala Phe Thr
    130                 135                 140


Glu Thr Leu Tyr Pro Ala Asp Gly Gly Leu Glu Gly Arg Asn Asp Met
145                 150                 155                 160


Ala Leu Lys Leu Val Gly Gly Ser His Leu Ile Ala Asn Ile Lys Thr
                165                 170                 175
```

```
Thr Tyr Arg Ser Lys Lys Pro Ala Lys Asn Leu Lys Met Pro Gly Val
            180                 185                 190


Tyr Tyr Val Asp Tyr Arg Leu Glu Arg Ile Lys Glu Ala Asn Asn Glu
        195                 200                 205


Thr Tyr Val Glu Gln His Glu Val Ala Val Ala Arg Tyr Cys Asp Leu
    210                 215                 220


Pro Ser Lys Leu Gly His Lys Leu Asn
225                 230


<210>  186
<211>  22
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  P2A domain

<400>  186

Gly Ser Gly Ala Thr Asn Phe Ser Leu Leu Lys Gln Ala Gly Asp Val
1               5                   10                  15


Glu Glu Asn Pro Gly Pro
            20


<210>  187
<211>  429
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  CD8 SS-FKBP(F36V)-TPOR/MPLR(478-582)-IL7R(316-459)-IL12Rb2(775-825)

<400>  187

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                   10                  15


His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
            20                  25                  30
```

```
Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
        35                  40                  45

Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
    50                  55                  60

Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65                  70                  75                  80

Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
                85                  90                  95

Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
            100                 105                 110

Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
        115                 120                 125

Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile
    130                 135                 140

Ser Leu Val Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu
145                 150                 155                 160

Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu
                165                 170                 175

Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly
            180                 185                 190

Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val
        195                 200                 205

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

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

Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys
                245                 250                 255
```

```
Gln Arg Leu Gly Gly Asp Val Gln Ser Pro Asn Cys Pro Ser Glu Asp
            260                 265                 270

Val Val Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys
        275                 280                 285

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

Arg Ser Leu Asp Cys Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr
305                 310                 315                 320

Gln Asp Leu Leu Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro
                325                 330                 335

Pro Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln
            340                 345                 350

Gly Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr
        355                 360                 365

Val Thr Met Ser Ser Phe Tyr Gln Asn Gln Ser Asp Pro Lys Pro Glu
    370                 375                 380

Asn Pro Ala Cys Pro Trp Thr Val Leu Pro Ala Gly Asp Leu Pro Thr
385                 390                 395                 400

His Asp Gly Tyr Leu Pro Ser Asn Ile Asp Asp Leu Pro Ser His Glu
                405                 410                 415

Ala Pro Leu Ala Asp Ser Leu Glu Glu Leu Glu Pro Gln
            420                 425
```

<210> 188
<211> 428
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-FKBP(F36V)-TPOR/MPLR(478-582;N-1)-IL7R(316-459)-IL12Rb2(775-825)

<400> 188

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                  10                  15

His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
            20                  25                  30

Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
        35                  40                  45

Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
    50                  55                  60

Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65                  70                  75                  80

Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
                85                  90                  95

Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
            100                 105                 110

Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
        115                 120                 125

Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Trp Ile Ser
    130                 135                 140

Leu Val Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly
145                 150                 155                 160

Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg
                165                 170                 175

His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln
            180                 185                 190

Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser
        195                 200                 205
```

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

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

Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys Gln
                245                 250                 255

Arg Leu Gly Gly Asp Val Gln Ser Pro Asn Cys Pro Ser Glu Asp Val
            260                 265                 270

Val Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys Leu
        275                 280                 285

Ala Gly Asn Val Ser Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg
    290                 295                 300

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

Asp Leu Leu Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro
                325                 330                 335

Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly
            340                 345                 350

Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val
        355                 360                 365

Thr Met Ser Ser Phe Tyr Gln Asn Gln Ser Asp Pro Lys Pro Glu Asn
    370                 375                 380

Pro Ala Cys Pro Trp Thr Val Leu Pro Ala Gly Asp Leu Pro Thr His
385                 390                 395                 400

Asp Gly Tyr Leu Pro Ser Asn Ile Asp Asp Leu Pro Ser His Glu Ala
                405                 410                 415

Pro Leu Ala Asp Ser Leu Glu Glu Leu Glu Pro Gln
            420                 425
```

<210> 189
<211> 427
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-FKBP(F36V)-TPOR/MPLR(478-582;N-2)-IL7R(316-459)-IL12Rb2(775-825)

<400> 189

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
20 25 30

Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
35 40 45

Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
50 55 60

Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65 70 75 80

Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
85 90 95

Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
100 105 110

Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
115 120 125

Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ile Ser Leu
130 135 140

Val Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu
145 150 155 160

Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His
165 170 175

```
Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr
            180                 185                 190

Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp
        195                 200                 205

Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser
    210                 215                 220

Ser Glu Arg Thr Pro Leu Pro Leu Ala Arg Asp Glu Val Glu Gly Phe
225                 230                 235                 240

Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg
                245                 250                 255

Leu Gly Gly Asp Val Gln Ser Pro Asn Cys Pro Ser Glu Asp Val Val
            260                 265                 270

Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala
        275                 280                 285

Gly Asn Val Ser Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser
    290                 295                 300

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

Leu Leu Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe
                325                 330                 335

Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly Gln
            340                 345                 350

Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr
        355                 360                 365

Met Ser Ser Phe Tyr Gln Asn Gln Ser Asp Pro Lys Pro Glu Asn Pro
    370                 375                 380
```

```
Ala Cys Pro Trp Thr Val Leu Pro Ala Gly Asp Leu Pro Thr His Asp
385                 390                 395                 400


Gly Tyr Leu Pro Ser Asn Ile Asp Asp Leu Pro Ser His Glu Ala Pro
                405                 410                 415


Leu Ala Asp Ser Leu Glu Glu Leu Glu Pro Gln
            420                 425


<210>  190
<211>  428
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  CD8 SS-FKBP(F36V)-TPOR/MPLR(478-582;N-2+1)-IL7R(316-459)-IL12Rb2(775-825)

<400>  190

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                   10                  15


His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
            20                  25                  30


Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
        35                  40                  45


Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
    50                  55                  60


Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65                  70                  75                  80


Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
                85                  90                  95


Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
            100                 105                 110


Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
        115                 120                 125
```

```
Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Leu Ile Ser
    130                 135                 140

Leu Val Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly
145                 150                 155                 160

Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg
                165                 170                 175

His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln
            180                 185                 190

Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser
        195                 200                 205

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

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

Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys Gln
                245                 250                 255

Arg Leu Gly Gly Asp Val Gln Ser Pro Asn Cys Pro Ser Glu Asp Val
            260                 265                 270

Val Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys Leu
        275                 280                 285

Ala Gly Asn Val Ser Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg
    290                 295                 300

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

Asp Leu Leu Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro
                325                 330                 335

Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly
            340                 345                 350
```

```
Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val
        355                 360                 365


Thr Met Ser Ser Phe Tyr Gln Asn Gln Ser Asp Pro Lys Pro Glu Asn
    370                 375                 380


Pro Ala Cys Pro Trp Thr Val Leu Pro Ala Gly Asp Leu Pro Thr His
385                 390                 395                 400


Asp Gly Tyr Leu Pro Ser Asn Ile Asp Asp Leu Pro Ser His Glu Ala
                405                 410                 415


Pro Leu Ala Asp Ser Leu Glu Glu Leu Glu Pro Gln
            420                 425


<210>  191
<211>  426
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  CD8 SS-FKBP(F36V)-TPOR/MPLR(478-582;N-3)-IL7R(316-459)-IL12Rb2(775-825)

<400>  191

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                   10                  15


His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
            20                  25                  30


Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
        35                  40                  45


Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
    50                  55                  60


Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65                  70                  75                  80


Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
                85                  90                  95
```

```
Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
            100                 105                 110

Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
        115                 120                 125

Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ser Leu Val
    130                 135                 140

Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu
145                 150                 155                 160

Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala
                165                 170                 175

Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu
            180                 185                 190

Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr
        195                 200                 205

Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser
    210                 215                 220

Glu Arg Thr Pro Leu Pro Leu Ala Arg Asp Glu Val Glu Gly Phe Leu
225                 230                 235                 240

Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu
                245                 250                 255

Gly Gly Asp Val Gln Ser Pro Asn Cys Pro Ser Glu Asp Val Val Ile
            260                 265                 270

Thr Pro Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly
        275                 280                 285

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

```
Asp Cys Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu
305                 310                 315                 320


Leu Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser
                325                 330                 335


Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro
            340                 345                 350


Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met
        355                 360                 365


Ser Ser Phe Tyr Gln Asn Gln Ser Asp Pro Lys Pro Glu Asn Pro Ala
    370                 375                 380


Cys Pro Trp Thr Val Leu Pro Ala Gly Asp Leu Pro Thr His Asp Gly
385                 390                 395                 400


Tyr Leu Pro Ser Asn Ile Asp Asp Leu Pro Ser His Glu Ala Pro Leu
                405                 410                 415


Ala Asp Ser Leu Glu Glu Leu Glu Pro Gln
            420                 425


<210>  192
<211>  425
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  CD8 SS-FKBP(F36V)-TPOR/MPLR(478-582;N-4)-IL7R(316-459)-IL12Rb2(775-825)

<400>  192

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                   10                  15


His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
            20                  25                  30


Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
        35                  40                  45
```

```
Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
    50                  55                  60

Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65                  70                  75                  80

Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
                85                  90                  95

Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
            100                 105                 110

Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
        115                 120                 125

Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Leu Val Thr
    130                 135                 140

Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu
145                 150                 155                 160

Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu
                165                 170                 175

Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg
            180                 185                 190

Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys
        195                 200                 205

Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu
    210                 215                 220

Arg Thr Pro Leu Pro Leu Ala Arg Asp Glu Val Glu Gly Phe Leu Gln
225                 230                 235                 240

Asp Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly
                245                 250                 255

Gly Asp Val Gln Ser Pro Asn Cys Pro Ser Glu Asp Val Val Ile Thr
            260                 265                 270
```

```
Pro Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn
        275                 280                 285


Val Ser Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp
    290                 295                 300


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


Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu
                325                 330                 335


Gln Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile
            340                 345                 350


Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser
        355                 360                 365


Ser Phe Tyr Gln Asn Gln Ser Asp Pro Lys Pro Glu Asn Pro Ala Cys
    370                 375                 380


Pro Trp Thr Val Leu Pro Ala Gly Asp Leu Pro Thr His Asp Gly Tyr
385                 390                 395                 400


Leu Pro Ser Asn Ile Asp Asp Leu Pro Ser His Glu Ala Pro Leu Ala
                405                 410                 415


Asp Ser Leu Glu Glu Leu Glu Pro Gln
            420                 425


<210>  193
<211>  426
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  CD8 SS-FKBP(F36V)-TPOR/MPLR(478-582;N-4+1)-IL7R(316-459)-IL12Rb2(775-825)

<400>  193

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                   10                  15
```

```
His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
            20                  25                  30

Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
        35                  40                  45

Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
    50                  55                  60

Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65                  70                  75                  80

Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
                85                  90                  95

Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
            100                 105                 110

Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
        115                 120                 125

Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ile Leu Val
    130                 135                 140

Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu
145                 150                 155                 160

Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala
                165                 170                 175

Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu
            180                 185                 190

Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr
        195                 200                 205

Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser
    210                 215                 220
```

```
Glu Arg Thr Pro Leu Pro Leu Ala Arg Asp Glu Val Glu Gly Phe Leu
225                 230                 235                 240


Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu
                245                 250                 255


Gly Gly Asp Val Gln Ser Pro Asn Cys Pro Ser Glu Asp Val Val Ile
            260                 265                 270


Thr Pro Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly
        275                 280                 285


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


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


Leu Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser
                325                 330                 335


Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro
            340                 345                 350


Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met
        355                 360                 365


Ser Ser Phe Tyr Gln Asn Gln Ser Asp Pro Lys Pro Glu Asn Pro Ala
    370                 375                 380


Cys Pro Trp Thr Val Leu Pro Ala Gly Asp Leu Pro Thr His Asp Gly
385                 390                 395                 400


Tyr Leu Pro Ser Asn Ile Asp Asp Leu Pro Ser His Glu Ala Pro Leu
                405                 410                 415


Ala Asp Ser Leu Glu Glu Leu Glu Pro Gln
            420                 425


<210>  194
<211>  424
```

<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-FKBP(F36V)-TPOR/MPLR(478-582;N-5)-IL7R(316-459)-IL12Rb2(775-825)

<400> 194

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
20 25 30

Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
35 40 45

Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
50 55 60

Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65 70 75 80

Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
85 90 95

Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
100 105 110

Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
115 120 125

Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Val Thr Ala
130 135 140

Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu
145 150 155 160

Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp
165 170 175

Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp
180 185 190

```
Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys Glu
        195                 200                 205

Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg
    210                 215                 220

Thr Pro Leu Pro Leu Ala Arg Asp Glu Val Glu Gly Phe Leu Gln Asp
225                 230                 235                 240

Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly
                245                 250                 255

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

Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn Val
        275                 280                 285

Ser Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys
    290                 295                 300

Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu
305                 310                 315                 320

Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln
                325                 330                 335

Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu
            340                 345                 350

Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser
        355                 360                 365

Phe Tyr Gln Asn Gln Ser Asp Pro Lys Pro Glu Asn Pro Ala Cys Pro
    370                 375                 380

Trp Thr Val Leu Pro Ala Gly Asp Leu Pro Thr His Asp Gly Tyr Leu
385                 390                 395                 400
```

Pro Ser Asn Ile Asp Asp Leu Pro Ser His Glu Ala Pro Leu Ala Asp
405 410 415

Ser Leu Glu Glu Leu Glu Pro Gln
420

<210> 195
<211> 423
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-FKBP(F36V)-TPOR/MPLR(478-582;N-6)-IL7R(316-459)-IL12Rb2(775-825)

<400> 195

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
20 25 30

Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
35 40 45

Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
50 55 60

Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65 70 75 80

Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
85 90 95

Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
100 105 110

Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
115 120 125

Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Thr Ala Leu
130 135 140

```
His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu Arg
145                 150                 155                 160

Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp Pro
                165                 170                 175

Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp Thr
            180                 185                 190

Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys Glu Glu
        195                 200                 205

Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg Thr
    210                 215                 220

Pro Leu Pro Leu Ala Arg Asp Glu Val Glu Gly Phe Leu Gln Asp Thr
225                 230                 235                 240

Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly Asp
                245                 250                 255

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

Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn Val Ser
        275                 280                 285

Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg
    290                 295                 300

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

Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln Ser
                325                 330                 335

Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu Thr
            340                 345                 350

Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser Phe
        355                 360                 365
```

```
Tyr Gln Asn Gln Ser Asp Pro Lys Pro Glu Asn Pro Ala Cys Pro Trp
    370                 375                 380


Thr Val Leu Pro Ala Gly Asp Leu Pro Thr His Asp Gly Tyr Leu Pro
385                 390                 395                 400


Ser Asn Ile Asp Asp Leu Pro Ser His Glu Ala Pro Leu Ala Asp Ser
                405                 410                 415


Leu Glu Glu Leu Glu Pro Gln
            420


<210>  196
<211>  422
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  CD8 SS-FKBP(F36V)-TPOR/MPLR(478-582;N-7)-IL7R(316-459)-IL12Rb2(775-825)

<400>  196

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                   10                  15


His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
            20                  25                  30


Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
        35                  40                  45


Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
    50                  55                  60


Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65                  70                  75                  80


Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
                85                  90                  95


Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
            100                 105                 110
```

```
Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
        115                 120                 125

Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Leu His
    130                 135                 140

Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu Arg Trp
145                 150                 155                 160

Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp Pro Ser
                165                 170                 175

Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp Thr Ala
            180                 185                 190

Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys Glu Glu Val
        195                 200                 205

Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg Thr Pro
    210                 215                 220

Leu Pro Leu Ala Arg Asp Glu Val Glu Gly Phe Leu Gln Asp Thr Phe
225                 230                 235                 240

Pro Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly Asp Val
                245                 250                 255

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

Phe Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn Val Ser Ala
        275                 280                 285

Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg Glu
    290                 295                 300

Ser Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu Ser Leu
305                 310                 315                 320
```

```
Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln Ser Gly
                325                 330                 335


Ile Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu Thr Ser
            340                 345                 350


Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr
        355                 360                 365


Gln Asn Gln Ser Asp Pro Lys Pro Glu Asn Pro Ala Cys Pro Trp Thr
    370                 375                 380


Val Leu Pro Ala Gly Asp Leu Pro Thr His Asp Gly Tyr Leu Pro Ser
385                 390                 395                 400


Asn Ile Asp Asp Leu Pro Ser His Glu Ala Pro Leu Ala Asp Ser Leu
                405                 410                 415


Glu Glu Leu Glu Pro Gln
            420


<210>  197
<211>  421
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  CD8 SS-FKBP(F36V)-TPOR/MPLR(478-582;N-8)-IL7R(316-459)-IL12Rb2(775-825)

<400>  197

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                   10                  15


His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
            20                  25                  30


Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
        35                  40                  45


Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
    50                  55                  60
```

```
Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65                  70                  75                  80

Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
                85                  90                  95

Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
            100                 105                 110

Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
        115                 120                 125

Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Leu His Leu
    130                 135                 140

Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu Arg Trp Gln
145                 150                 155                 160

Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp Pro Ser Leu
                165                 170                 175

Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp Thr Ala Ala
            180                 185                 190

Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys Glu Glu Val Glu
        195                 200                 205

Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg Thr Pro Leu
    210                 215                 220

Pro Leu Ala Arg Asp Glu Val Glu Gly Phe Leu Gln Asp Thr Phe Pro
225                 230                 235                 240

Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly Asp Val Gln
                245                 250                 255

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

Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn Val Ser Ala Cys
        275                 280                 285
```

```
Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg Glu Ser
    290                 295                 300

Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu Ser Leu Gly
305                 310                 315                 320

Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln Ser Gly Ile
                325                 330                 335

Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu Thr Ser Leu
            340                 345                 350

Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln
        355                 360                 365

Asn Gln Ser Asp Pro Lys Pro Glu Asn Pro Ala Cys Pro Trp Thr Val
    370                 375                 380

Leu Pro Ala Gly Asp Leu Pro Thr His Asp Gly Tyr Leu Pro Ser Asn
385                 390                 395                 400

Ile Asp Asp Leu Pro Ser His Glu Ala Pro Leu Ala Asp Ser Leu Glu
                405                 410                 415

Glu Leu Glu Pro Gln
            420
```

<210> 198
<211> 420
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-FKBP(F36V)-TPOR/MPLR(478-582;N-9)-IL7R(316-459)-IL12Rb2(775-825)

<400> 198

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                   10                  15

His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
            20                  25                  30
```

```
Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
        35                  40                  45

Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
    50                  55                  60

Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65                  70                  75                  80

Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
                85                  90                  95

Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
            100                 105                 110

Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
        115                 120                 125

Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr His Leu Val
    130                 135                 140

Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu Arg Trp Gln Phe
145                 150                 155                 160

Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp Pro Ser Leu Pro
                165                 170                 175

Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp Thr Ala Ala Leu
            180                 185                 190

Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys Glu Glu Val Glu Pro
        195                 200                 205

Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg Thr Pro Leu Pro
    210                 215                 220

Leu Ala Arg Asp Glu Val Glu Gly Phe Leu Gln Asp Thr Phe Pro Gln
225                 230                 235                 240
```

```
Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly Asp Val Gln Ser
                245                 250                 255

Pro Asn Cys Pro Ser Glu Asp Val Val Ile Thr Pro Glu Ser Phe Gly
            260                 265                 270

Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn Val Ser Ala Cys Asp
        275                 280                 285

Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg Glu Ser Gly
    290                 295                 300

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

Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln Ser Gly Ile Leu
                325                 330                 335

Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu Thr Ser Leu Gly
            340                 345                 350

Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln Asn
        355                 360                 365

Gln Ser Asp Pro Lys Pro Glu Asn Pro Ala Cys Pro Trp Thr Val Leu
    370                 375                 380

Pro Ala Gly Asp Leu Pro Thr His Asp Gly Tyr Leu Pro Ser Asn Ile
385                 390                 395                 400

Asp Asp Leu Pro Ser His Glu Ala Pro Leu Ala Asp Ser Leu Glu Glu
                405                 410                 415

Leu Glu Pro Gln
            420
```

<210> 199
<211> 419
<212> PRT
<213> Artificial Sequence

<220>

<223> CD8 SS-FKBP(F36V)-TPOR/MPLR(478-582;N-10)-IL7R(316-459)-IL12Rb2(775-825)

<400> 199

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                  10                  15


His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
            20                  25                  30


Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
        35                  40                  45


Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
    50                  55                  60


Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65                  70                  75                  80


Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
                85                  90                  95


Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
            100                 105                 110


Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
        115                 120                 125


Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Leu Val Leu
    130                 135                 140


Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro
145                 150                 155                 160


Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp Pro Ser Leu Pro Asp
                165                 170                 175


Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser
            180                 185                 190


Pro Pro Lys Ala Thr Val Ser Asp Thr Cys Glu Glu Val Glu Pro Ser
        195                 200                 205
```

```
Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu
    210                 215                 220

Ala Arg Asp Glu Val Glu Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln
225                 230                 235                 240

Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly Asp Val Gln Ser Pro
                245                 250                 255

Asn Cys Pro Ser Glu Asp Val Val Ile Thr Pro Glu Ser Phe Gly Arg
            260                 265                 270

Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn Val Ser Ala Cys Asp Ala
        275                 280                 285

Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg Glu Ser Gly Lys
    290                 295                 300

Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu Ser Leu Gly Thr Thr
305                 310                 315                 320

Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln Ser Gly Ile Leu Thr
                325                 330                 335

Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu Thr Ser Leu Gly Ser
            340                 345                 350

Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln Asn Gln
        355                 360                 365

Ser Asp Pro Lys Pro Glu Asn Pro Ala Cys Pro Trp Thr Val Leu Pro
    370                 375                 380

Ala Gly Asp Leu Pro Thr His Asp Gly Tyr Leu Pro Ser Asn Ile Asp
385                 390                 395                 400

Asp Leu Pro Ser His Glu Ala Pro Leu Ala Asp Ser Leu Glu Glu Leu
                405                 410                 415
```

Glu Pro Gln

<210> 200
<211> 418
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-FKBP(F36V)-TPOR/MPLR(478-582;N-11)-IL7R(316-459)-IL12Rb2(775-825)

<400> 200

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
20 25 30

Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
35 40 45

Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
50 55 60

Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65 70 75 80

Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
85 90 95

Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
100 105 110

Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
115 120 125

Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Val Leu Gly
130 135 140

Leu Ser Ala Val Leu Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala
145 150 155 160

```
His Tyr Arg Arg Leu Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu
                165                 170                 175

His Arg Val Leu Gly Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro
            180                 185                 190

Pro Lys Ala Thr Val Ser Asp Thr Cys Glu Glu Val Glu Pro Ser Leu
        195                 200                 205

Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu Ala
    210                 215                 220

Arg Asp Glu Val Glu Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu
225                 230                 235                 240

Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly Asp Val Gln Ser Pro Asn
                245                 250                 255

Cys Pro Ser Glu Asp Val Val Ile Thr Pro Glu Ser Phe Gly Arg Asp
            260                 265                 270

Ser Ser Leu Thr Cys Leu Ala Gly Asn Val Ser Ala Cys Asp Ala Pro
        275                 280                 285

Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg Glu Ser Gly Lys Asn
    290                 295                 300

Gly Pro His Val Tyr Gln Asp Leu Leu Leu Ser Leu Gly Thr Thr Asn
305                 310                 315                 320

Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu
                325                 330                 335

Asn Pro Val Ala Gln Gly Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn
            340                 345                 350

Gln Glu Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln Asn Gln Ser
        355                 360                 365

Asp Pro Lys Pro Glu Asn Pro Ala Cys Pro Trp Thr Val Leu Pro Ala
    370                 375                 380
```

Gly Asp Leu Pro Thr His Asp Gly Tyr Leu Pro Ser Asn Ile Asp Asp
385 390 395 400

Leu Pro Ser His Glu Ala Pro Leu Ala Asp Ser Leu Glu Glu Leu Glu
405 410 415

Pro Gln

<210> 201
<211> 417
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-FKBP(F36V)-TPOR/MPLR(478-582;N-12)-IL7R(316-459)-IL12Rb2(775-825)

<400> 201

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
20 25 30

Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
35 40 45

Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
50 55 60

Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65 70 75 80

Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
85 90 95

Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
100 105 110

Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
115 120 125

```
Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Leu Gly Leu
    130                 135                 140

Ser Ala Val Leu Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His
145                 150                 155                 160

Tyr Arg Arg Leu Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His
                165                 170                 175

Arg Val Leu Gly Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro
            180                 185                 190

Lys Ala Thr Val Ser Asp Thr Cys Glu Glu Val Glu Pro Ser Leu Leu
        195                 200                 205

Glu Ile Leu Pro Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu Ala Arg
    210                 215                 220

Asp Glu Val Glu Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu
225                 230                 235                 240

Glu Ser Glu Lys Gln Arg Leu Gly Gly Asp Val Gln Ser Pro Asn Cys
                245                 250                 255

Pro Ser Glu Asp Val Val Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser
            260                 265                 270

Ser Leu Thr Cys Leu Ala Gly Asn Val Ser Ala Cys Asp Ala Pro Ile
        275                 280                 285

Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg Glu Ser Gly Lys Asn Gly
    290                 295                 300

Pro His Val Tyr Gln Asp Leu Leu Leu Ser Leu Gly Thr Thr Asn Ser
305                 310                 315                 320

Thr Leu Pro Pro Pro Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn
                325                 330                 335
```

```
Pro Val Ala Gln Gly Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln
            340                 345                 350

Glu Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln Asn Gln Ser Asp
        355                 360                 365

Pro Lys Pro Glu Asn Pro Ala Cys Pro Trp Thr Val Leu Pro Ala Gly
    370                 375                 380

Asp Leu Pro Thr His Asp Gly Tyr Leu Pro Ser Asn Ile Asp Asp Leu
385                 390                 395                 400

Pro Ser His Glu Ala Pro Leu Ala Asp Ser Leu Glu Glu Leu Glu Pro
                405                 410                 415

Gln
```

<210> 202
<211> 416
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-FKBP(F36V)-TPOR/MPLR(478-582;N-13)-IL7R(316-459)-IL12Rb2(775-825)

<400> 202

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                   10                  15

His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
            20                  25                  30

Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
        35                  40                  45

Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
    50                  55                  60

Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65                  70                  75                  80
```

```
Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
                85                  90                  95

Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
            100                 105                 110

Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
        115                 120                 125

Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Gly Leu Ser
    130                 135                 140

Ala Val Leu Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr
145                 150                 155                 160

Arg Arg Leu Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg
                165                 170                 175

Val Leu Gly Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys
            180                 185                 190

Ala Thr Val Ser Asp Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu
        195                 200                 205

Ile Leu Pro Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu Ala Arg Asp
    210                 215                 220

Glu Val Glu Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu
225                 230                 235                 240

Ser Glu Lys Gln Arg Leu Gly Gly Asp Val Gln Ser Pro Asn Cys Pro
                245                 250                 255

Ser Glu Asp Val Val Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser Ser
            260                 265                 270

Leu Thr Cys Leu Ala Gly Asn Val Ser Ala Cys Asp Ala Pro Ile Leu
        275                 280                 285

Ser Ser Ser Arg Ser Leu Asp Cys Arg Glu Ser Gly Lys Asn Gly Pro
    290                 295                 300
```

```
His Val Tyr Gln Asp Leu Leu Leu Ser Leu Gly Thr Thr Asn Ser Thr
305                 310                 315                 320


Leu Pro Pro Pro Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro
                325                 330                 335


Val Ala Gln Gly Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu
            340                 345                 350


Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln Asn Gln Ser Asp Pro
        355                 360                 365


Lys Pro Glu Asn Pro Ala Cys Pro Trp Thr Val Leu Pro Ala Gly Asp
    370                 375                 380


Leu Pro Thr His Asp Gly Tyr Leu Pro Ser Asn Ile Asp Asp Leu Pro
385                 390                 395                 400


Ser His Glu Ala Pro Leu Ala Asp Ser Leu Glu Glu Leu Glu Pro Gln
                405                 410                 415


<210>  203
<211>  415
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  CD8 SS-FKBP(F36V)-TPOR/MPLR(478-582;N-14)-IL7R(316-459)-IL12Rb2(775-825)

<400>  203

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                   10                  15


His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
            20                  25                  30


Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
        35                  40                  45


Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
    50                  55                  60
```

```
Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65                  70                  75                  80

Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
                85                  90                  95

Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
            100                 105                 110

Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
        115                 120                 125

Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Leu Ser Ala
    130                 135                 140

Val Leu Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg
145                 150                 155                 160

Arg Leu Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val
                165                 170                 175

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

Thr Val Ser Asp Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile
        195                 200                 205

Leu Pro Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu Ala Arg Asp Glu
    210                 215                 220

Val Glu Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu Ser
225                 230                 235                 240

Glu Lys Gln Arg Leu Gly Gly Asp Val Gln Ser Pro Asn Cys Pro Ser
                245                 250                 255

Glu Asp Val Val Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser Ser Leu
            260                 265                 270
```

```
Thr Cys Leu Ala Gly Asn Val Ser Ala Cys Asp Ala Pro Ile Leu Ser
        275                 280                 285

Ser Ser Arg Ser Leu Asp Cys Arg Glu Ser Gly Lys Asn Gly Pro His
    290                 295                 300

Val Tyr Gln Asp Leu Leu Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu
305                 310                 315                 320

Pro Pro Pro Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro Val
                325                 330                 335

Ala Gln Gly Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu
            340                 345                 350

Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln Asn Gln Ser Asp Pro Lys
        355                 360                 365

Pro Glu Asn Pro Ala Cys Pro Trp Thr Val Leu Pro Ala Gly Asp Leu
    370                 375                 380

Pro Thr His Asp Gly Tyr Leu Pro Ser Asn Ile Asp Asp Leu Pro Ser
385                 390                 395                 400

His Glu Ala Pro Leu Ala Asp Ser Leu Glu Glu Leu Glu Pro Gln
                405                 410                 415
```

<210> 204
<211> 414
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-FKBP(F36V)-TPOR/MPLR(478-582;N-15)-IL7R(316-459)-IL12Rb2(775-825)

<400> 204

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                   10                  15

His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
            20                  25                  30
```

```
Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
        35                  40                  45

Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
    50                  55                  60

Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65                  70                  75                  80

Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
                85                  90                  95

Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
            100                 105                 110

Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
        115                 120                 125

Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ser Ala Val
    130                 135                 140

Leu Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg
145                 150                 155                 160

Leu Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu
                165                 170                 175

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

Val Ser Asp Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu
        195                 200                 205

Pro Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu Ala Arg Asp Glu Val
    210                 215                 220

Glu Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu
225                 230                 235                 240

Lys Gln Arg Leu Gly Gly Asp Val Gln Ser Pro Asn Cys Pro Ser Glu
                245                 250                 255
```

```
Asp Val Val Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr
            260                 265                 270


Cys Leu Ala Gly Asn Val Ser Ala Cys Asp Ala Pro Ile Leu Ser Ser
        275                 280                 285


Ser Arg Ser Leu Asp Cys Arg Glu Ser Gly Lys Asn Gly Pro His Val
    290                 295                 300


Tyr Gln Asp Leu Leu Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro
305                 310                 315                 320


Pro Pro Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro Val Ala
                325                 330                 335


Gln Gly Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala
            340                 345                 350


Tyr Val Thr Met Ser Ser Phe Tyr Gln Asn Gln Ser Asp Pro Lys Pro
        355                 360                 365


Glu Asn Pro Ala Cys Pro Trp Thr Val Leu Pro Ala Gly Asp Leu Pro
    370                 375                 380


Thr His Asp Gly Tyr Leu Pro Ser Asn Ile Asp Asp Leu Pro Ser His
385                 390                 395                 400


Glu Ala Pro Leu Ala Asp Ser Leu Glu Glu Leu Glu Pro Gln
                405                 410


<210>  205
<211>  413
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  CD8 SS-FKBP(F36V)-TPOR/MPLR(478-582;N-16)-IL7R(316-459)-IL12Rb2(775-825)

<400>  205

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                   10                  15
```

```
His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
            20                  25                  30

Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
        35                  40                  45

Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
    50                  55                  60

Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65                  70                  75                  80

Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
                85                  90                  95

Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
            100                 105                 110

Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
        115                 120                 125

Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Val Leu
    130                 135                 140

Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu
145                 150                 155                 160

Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly
                165                 170                 175

Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val
            180                 185                 190

Ser Asp Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro
        195                 200                 205

Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu Ala Arg Asp Glu Val Glu
    210                 215                 220
```

```
Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys
225                 230                 235                 240


Gln Arg Leu Gly Gly Asp Val Gln Ser Pro Asn Cys Pro Ser Glu Asp
                245                 250                 255


Val Val Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys
            260                 265                 270


Leu Ala Gly Asn Val Ser Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser
        275                 280                 285


Arg Ser Leu Asp Cys Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr
    290                 295                 300


Gln Asp Leu Leu Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro
305                 310                 315                 320


Pro Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln
                325                 330                 335


Gly Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr
            340                 345                 350


Val Thr Met Ser Ser Phe Tyr Gln Asn Gln Ser Asp Pro Lys Pro Glu
        355                 360                 365


Asn Pro Ala Cys Pro Trp Thr Val Leu Pro Ala Gly Asp Leu Pro Thr
    370                 375                 380


His Asp Gly Tyr Leu Pro Ser Asn Ile Asp Asp Leu Pro Ser His Glu
385                 390                 395                 400


Ala Pro Leu Ala Asp Ser Leu Glu Glu Leu Glu Pro Gln
                405                 410


<210>  206
<211>  412
<212>  PRT
<213>  Artificial Sequence

<220>
```

<223> CD8 SS-FKBP(F36V)-TPOR/MPLR(478-582;N-17)-IL7R(316-459)-IL12Rb2(775-825)

<400> 206

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                  10                  15


His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
            20                  25                  30


Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
        35                  40                  45


Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
    50                  55                  60


Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65                  70                  75                  80


Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
                85                  90                  95


Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
            100                 105                 110


Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
        115                 120                 125


Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Val Leu Gly
    130                 135                 140


Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg
145                 150                 155                 160


His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln
                165                 170                 175


Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser
            180                 185                 190


Asp Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys
        195                 200                 205
```

```
Ser Ser Glu Arg Thr Pro Leu Pro Leu Ala Arg Asp Glu Val Glu Gly
    210                 215                 220

Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys Gln
225                 230                 235                 240

Arg Leu Gly Gly Asp Val Gln Ser Pro Asn Cys Pro Ser Glu Asp Val
                245                 250                 255

Val Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys Leu
            260                 265                 270

Ala Gly Asn Val Ser Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg
        275                 280                 285

Ser Leu Asp Cys Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr Gln
    290                 295                 300

Asp Leu Leu Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro
305                 310                 315                 320

Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly
                325                 330                 335

Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val
            340                 345                 350

Thr Met Ser Ser Phe Tyr Gln Asn Gln Ser Asp Pro Lys Pro Glu Asn
        355                 360                 365

Pro Ala Cys Pro Trp Thr Val Leu Pro Ala Gly Asp Leu Pro Thr His
    370                 375                 380

Asp Gly Tyr Leu Pro Ser Asn Ile Asp Asp Leu Pro Ser His Glu Ala
385                 390                 395                 400

Pro Leu Ala Asp Ser Leu Glu Glu Leu Glu Pro Gln
                405                 410
```

<210> 207
<211> 411
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-FKBP(F36V)-TPOR/MPLR(478-582;N-18)-IL7R(316-459)-IL12Rb2(775-825)

<400> 207

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
20 25 30

Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
35 40 45

Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
50 55 60

Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65 70 75 80

Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
85 90 95

Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
100 105 110

Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
115 120 125

Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Leu Gly Leu
130 135 140

Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His
145 150 155 160

Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr
165 170 175

```
Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp
            180                 185                 190

Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser
        195                 200                 205

Ser Glu Arg Thr Pro Leu Pro Leu Ala Arg Asp Glu Val Glu Gly Phe
    210                 215                 220

Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg
225                 230                 235                 240

Leu Gly Gly Asp Val Gln Ser Pro Asn Cys Pro Ser Glu Asp Val Val
                245                 250                 255

Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala
            260                 265                 270

Gly Asn Val Ser Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser
        275                 280                 285

Leu Asp Cys Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr Gln Asp
    290                 295                 300

Leu Leu Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe
305                 310                 315                 320

Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly Gln
                325                 330                 335

Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr
            340                 345                 350

Met Ser Ser Phe Tyr Gln Asn Gln Ser Asp Pro Lys Pro Glu Asn Pro
        355                 360                 365

Ala Cys Pro Trp Thr Val Leu Pro Ala Gly Asp Leu Pro Thr His Asp
    370                 375                 380

Gly Tyr Leu Pro Ser Asn Ile Asp Asp Leu Pro Ser His Glu Ala Pro
385                 390                 395                 400
```

Leu Ala Asp Ser Leu Glu Glu Leu Glu Pro Gln
405 410

<210> 208
<211> 430
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-FKBP(F36V)-TPOR/MPLR(478-582;N+1)-IL7R(316-459)-IL12Rb2(775-825)

<400> 208

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
20 25 30

Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
35 40 45

Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
50 55 60

Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65 70 75 80

Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
85 90 95

Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
100 105 110

Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
115 120 125

Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Leu
130 135 140

Ile Ser Leu Val Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala Val
145 150 155 160

```
Leu Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg
                165                 170                 175

Leu Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu
            180                 185                 190

Gly Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr
        195                 200                 205

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

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

Glu Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu
                245                 250                 255

Lys Gln Arg Leu Gly Gly Asp Val Gln Ser Pro Asn Cys Pro Ser Glu
            260                 265                 270

Asp Val Val Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr
        275                 280                 285

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

Ser Arg Ser Leu Asp Cys Arg Glu Ser Gly Lys Asn Gly Pro His Val
305                 310                 315                 320

Tyr Gln Asp Leu Leu Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro
                325                 330                 335

Pro Pro Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro Val Ala
            340                 345                 350

Gln Gly Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala
        355                 360                 365
```

```
Tyr Val Thr Met Ser Ser Phe Tyr Gln Asn Gln Ser Asp Pro Lys Pro
    370                 375                 380

Glu Asn Pro Ala Cys Pro Trp Thr Val Leu Pro Ala Gly Asp Leu Pro
385                 390                 395                 400

Thr His Asp Gly Tyr Leu Pro Ser Asn Ile Asp Asp Leu Pro Ser His
                405                 410                 415

Glu Ala Pro Leu Ala Asp Ser Leu Glu Glu Leu Glu Pro Gln
            420                 425                 430
```

<210> 209
<211> 431
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-FKBP(F36V)-TPOR/MPLR(478-582;N+2)-IL7R(316-459)-IL12Rb2(775-825)

<400> 209

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                   10                  15

His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
            20                  25                  30

Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
        35                  40                  45

Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
    50                  55                  60

Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65                  70                  75                  80

Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
                85                  90                  95

Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
            100                 105                 110
```

```
Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
        115                 120                 125

Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Val
    130                 135                 140

Leu Ile Ser Leu Val Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala
145                 150                 155                 160

Val Leu Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg
                165                 170                 175

Arg Leu Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val
            180                 185                 190

Leu Gly Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala
        195                 200                 205

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

Leu Pro Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu Ala Arg Asp Glu
225                 230                 235                 240

Val Glu Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu Ser
                245                 250                 255

Glu Lys Gln Arg Leu Gly Gly Asp Val Gln Ser Pro Asn Cys Pro Ser
            260                 265                 270

Glu Asp Val Val Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser Ser Leu
        275                 280                 285

Thr Cys Leu Ala Gly Asn Val Ser Ala Cys Asp Ala Pro Ile Leu Ser
    290                 295                 300

Ser Ser Arg Ser Leu Asp Cys Arg Glu Ser Gly Lys Asn Gly Pro His
305                 310                 315                 320

Val Tyr Gln Asp Leu Leu Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu
                325                 330                 335
```

```
Pro Pro Pro Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro Val
            340                 345                 350


Ala Gln Gly Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu
        355                 360                 365


Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln Asn Gln Ser Asp Pro Lys
    370                 375                 380


Pro Glu Asn Pro Ala Cys Pro Trp Thr Val Leu Pro Ala Gly Asp Leu
385                 390                 395                 400


Pro Thr His Asp Gly Tyr Leu Pro Ser Asn Ile Asp Asp Leu Pro Ser
                405                 410                 415


His Glu Ala Pro Leu Ala Asp Ser Leu Glu Glu Leu Glu Pro Gln
            420                 425                 430


<210>  210
<211>  432
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  CD8 SS-FKBP(F36V)-TPOR/MPLR(478-582;N+3)-IL7R(316-459)-IL12Rb2(775-825)

<400>  210

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                   10                  15


His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
            20                  25                  30


Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
        35                  40                  45


Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
    50                  55                  60


Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65                  70                  75                  80
```

```
Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
                85                  90                  95

Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
            100                 105                 110

Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
        115                 120                 125

Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Leu
    130                 135                 140

Val Leu Ile Ser Leu Val Thr Ala Leu His Leu Val Leu Gly Leu Ser
145                 150                 155                 160

Ala Val Leu Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr
                165                 170                 175

Arg Arg Leu Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg
            180                 185                 190

Val Leu Gly Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys
        195                 200                 205

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

Ile Leu Pro Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu Ala Arg Asp
225                 230                 235                 240

Glu Val Glu Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu
                245                 250                 255

Ser Glu Lys Gln Arg Leu Gly Gly Asp Val Gln Ser Pro Asn Cys Pro
            260                 265                 270

Ser Glu Asp Val Val Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser Ser
        275                 280                 285
```

```
Leu Thr Cys Leu Ala Gly Asn Val Ser Ala Cys Asp Ala Pro Ile Leu
    290                 295                 300

Ser Ser Ser Arg Ser Leu Asp Cys Arg Glu Ser Gly Lys Asn Gly Pro
305                 310                 315                 320

His Val Tyr Gln Asp Leu Leu Leu Ser Leu Gly Thr Thr Asn Ser Thr
                325                 330                 335

Leu Pro Pro Pro Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro
            340                 345                 350

Val Ala Gln Gly Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu
        355                 360                 365

Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln Asn Gln Ser Asp Pro
    370                 375                 380

Lys Pro Glu Asn Pro Ala Cys Pro Trp Thr Val Leu Pro Ala Gly Asp
385                 390                 395                 400

Leu Pro Thr His Asp Gly Tyr Leu Pro Ser Asn Ile Asp Asp Leu Pro
                405                 410                 415

Ser His Glu Ala Pro Leu Ala Asp Ser Leu Glu Glu Leu Glu Pro Gln
            420                 425                 430
```

<210> 211
<211> 433
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-FKBP(F36V)-TPOR/MPLR(478-582;N+4)-IL7R(316-459)-IL12Rb2(775-825)

<400> 211

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                   10                  15

His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
            20                  25                  30
```

```
Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
        35                  40                  45

Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
    50                  55                  60

Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65                  70                  75                  80

Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
                85                  90                  95

Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
            100                 105                 110

Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
        115                 120                 125

Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile
    130                 135                 140

Leu Val Leu Ile Ser Leu Val Thr Ala Leu His Leu Val Leu Gly Leu
145                 150                 155                 160

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

Tyr Arg Arg Leu Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His
            180                 185                 190

Arg Val Leu Gly Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro
        195                 200                 205

Lys Ala Thr Val Ser Asp Thr Cys Glu Glu Val Glu Pro Ser Leu Leu
    210                 215                 220

Glu Ile Leu Pro Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu Ala Arg
225                 230                 235                 240

Asp Glu Val Glu Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu
                245                 250                 255
```

```
Glu Ser Glu Lys Gln Arg Leu Gly Gly Asp Val Gln Ser Pro Asn Cys
            260                 265                 270

Pro Ser Glu Asp Val Val Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser
        275                 280                 285

Ser Leu Thr Cys Leu Ala Gly Asn Val Ser Ala Cys Asp Ala Pro Ile
    290                 295                 300

Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg Glu Ser Gly Lys Asn Gly
305                 310                 315                 320

Pro His Val Tyr Gln Asp Leu Leu Leu Ser Leu Gly Thr Thr Asn Ser
                325                 330                 335

Thr Leu Pro Pro Pro Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn
            340                 345                 350

Pro Val Ala Gln Gly Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln
        355                 360                 365

Glu Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln Asn Gln Ser Asp
    370                 375                 380

Pro Lys Pro Glu Asn Pro Ala Cys Pro Trp Thr Val Leu Pro Ala Gly
385                 390                 395                 400

Asp Leu Pro Thr His Asp Gly Tyr Leu Pro Ser Asn Ile Asp Asp Leu
                405                 410                 415

Pro Ser His Glu Ala Pro Leu Ala Asp Ser Leu Glu Glu Leu Glu Pro
            420                 425                 430

Gln
```

<210> 212
<211> 434
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-FKBP(F36V)-TPOR/MPLR(478-582;N+5)-IL7R(316-459)-IL12Rb2(775-825)

<400> 212

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                  10                  15


His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
            20                  25                  30


Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
        35                  40                  45


Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
    50                  55                  60


Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65                  70                  75                  80


Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
                85                  90                  95


Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
            100                 105                 110


Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
        115                 120                 125


Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Leu
    130                 135                 140


Ile Leu Val Leu Ile Ser Leu Val Thr Ala Leu His Leu Val Leu Gly
145                 150                 155                 160


Leu Ser Ala Val Leu Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala
                165                 170                 175


His Tyr Arg Arg Leu Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu
            180                 185                 190
```

```
His Arg Val Leu Gly Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro
        195                 200                 205

Pro Lys Ala Thr Val Ser Asp Thr Cys Glu Glu Val Glu Pro Ser Leu
    210                 215                 220

Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu Ala
225                 230                 235                 240

Arg Asp Glu Val Glu Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu
                245                 250                 255

Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly Asp Val Gln Ser Pro Asn
            260                 265                 270

Cys Pro Ser Glu Asp Val Val Ile Thr Pro Glu Ser Phe Gly Arg Asp
        275                 280                 285

Ser Ser Leu Thr Cys Leu Ala Gly Asn Val Ser Ala Cys Asp Ala Pro
    290                 295                 300

Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg Glu Ser Gly Lys Asn
305                 310                 315                 320

Gly Pro His Val Tyr Gln Asp Leu Leu Leu Ser Leu Gly Thr Thr Asn
                325                 330                 335

Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu
            340                 345                 350

Asn Pro Val Ala Gln Gly Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn
        355                 360                 365

Gln Glu Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln Asn Gln Ser
    370                 375                 380

Asp Pro Lys Pro Glu Asn Pro Ala Cys Pro Trp Thr Val Leu Pro Ala
385                 390                 395                 400

Gly Asp Leu Pro Thr His Asp Gly Tyr Leu Pro Ser Asn Ile Asp Asp
                405                 410                 415
```

Leu Pro Ser His Glu Ala Pro Leu Ala Asp Ser Leu Glu Glu Leu Glu
420 425 430

Pro Gln

<210> 213
<211> 435
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-FKBP(F36V)-TPOR/MPLR(478-582;N+6)-IL7R(316-459)-IL12Rb2(775-825)

<400> 213

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
20 25 30

Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
35 40 45

Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
50 55 60

Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65 70 75 80

Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
85 90 95

Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
100 105 110

Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
115 120 125

Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Leu
130 135 140

```
Leu Ile Leu Val Leu Ile Ser Leu Val Thr Ala Leu His Leu Val Leu
145                 150                 155                 160

Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro
                165                 170                 175

Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp Pro Ser Leu Pro Asp
            180                 185                 190

Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser
        195                 200                 205

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

Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu
225                 230                 235                 240

Ala Arg Asp Glu Val Glu Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln
                245                 250                 255

Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly Asp Val Gln Ser Pro
            260                 265                 270

Asn Cys Pro Ser Glu Asp Val Val Ile Thr Pro Glu Ser Phe Gly Arg
        275                 280                 285

Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn Val Ser Ala Cys Asp Ala
    290                 295                 300

Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg Glu Ser Gly Lys
305                 310                 315                 320

Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu Ser Leu Gly Thr Thr
                325                 330                 335

Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln Ser Gly Ile Leu Thr
            340                 345                 350
```

Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu Thr Ser Leu Gly Ser
355 360 365

Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln Asn Gln
370 375 380

Ser Asp Pro Lys Pro Glu Asn Pro Ala Cys Pro Trp Thr Val Leu Pro
385 390 395 400

Ala Gly Asp Leu Pro Thr His Asp Gly Tyr Leu Pro Ser Asn Ile Asp
405 410 415

Asp Leu Pro Ser His Glu Ala Pro Leu Ala Asp Ser Leu Glu Glu Leu
420 425 430

Glu Pro Gln
435

<210> 214
<211> 436
<212> PRT
<213> Artificial Sequence

<220>
<223> CD8 SS-FKBP(F36V)-TPOR/MPLR(478-582;N+7)-IL7R(316-459)-IL12Rb2(775-825)

<400> 214

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
20 25 30

Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
35 40 45

Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
50 55 60

Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65 70 75 80

```
Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
                85                  90                  95

Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
            100                 105                 110

Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
        115                 120                 125

Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Val
    130                 135                 140

Leu Leu Ile Leu Val Leu Ile Ser Leu Val Thr Ala Leu His Leu Val
145                 150                 155                 160

Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu Arg Trp Gln Phe
                165                 170                 175

Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp Pro Ser Leu Pro
            180                 185                 190

Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp Thr Ala Ala Leu
        195                 200                 205

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

Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg Thr Pro Leu Pro
225                 230                 235                 240

Leu Ala Arg Asp Glu Val Glu Gly Phe Leu Gln Asp Thr Phe Pro Gln
                245                 250                 255

Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly Asp Val Gln Ser
            260                 265                 270

Pro Asn Cys Pro Ser Glu Asp Val Val Ile Thr Pro Glu Ser Phe Gly
        275                 280                 285

Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn Val Ser Ala Cys Asp
    290                 295                 300
```

```
Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg Glu Ser Gly
305                 310                 315                 320


Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu Ser Leu Gly Thr
                325                 330                 335


Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln Ser Gly Ile Leu
            340                 345                 350


Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu Thr Ser Leu Gly
        355                 360                 365


Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln Asn
    370                 375                 380


Gln Ser Asp Pro Lys Pro Glu Asn Pro Ala Cys Pro Trp Thr Val Leu
385                 390                 395                 400


Pro Ala Gly Asp Leu Pro Thr His Asp Gly Tyr Leu Pro Ser Asn Ile
                405                 410                 415


Asp Asp Leu Pro Ser His Glu Ala Pro Leu Ala Asp Ser Leu Glu Glu
            420                 425                 430


Leu Glu Pro Gln
        435


<210>  215
<211>  437
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  CD8 SS-FKBP(F36V)-TPOR/MPLR(478-582;N+7)-IL7R(316-459)-IL12Rb2(775-825)

<400>  215

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                   10                  15


His Ala Ala Arg Pro Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly
            20                  25                  30
```

```
Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr
        35                  40                  45

Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg
    50                  55                  60

Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly
65                  70                  75                  80

Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu
                85                  90                  95

Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile
            100                 105                 110

Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu
        115                 120                 125

Glu Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Leu
    130                 135                 140

Val Leu Leu Ile Leu Val Leu Ile Ser Leu Val Thr Ala Leu His Leu
145                 150                 155                 160

Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu Arg Trp Gln
                165                 170                 175

Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp Pro Ser Leu
            180                 185                 190

Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp Thr Ala Ala
        195                 200                 205

Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys Glu Glu Val Glu
    210                 215                 220

Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg Thr Pro Leu
225                 230                 235                 240
```

```
Pro Leu Ala Arg Asp Glu Val Glu Gly Phe Leu Gln Asp Thr Phe Pro
                245                 250                 255

Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly Asp Val Gln
            260                 265                 270

Ser Pro Asn Cys Pro Ser Glu Asp Val Val Ile Thr Pro Glu Ser Phe
        275                 280                 285

Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn Val Ser Ala Cys
    290                 295                 300

Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg Glu Ser
305                 310                 315                 320

Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu Ser Leu Gly
                325                 330                 335

Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln Ser Gly Ile
            340                 345                 350

Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu Thr Ser Leu
        355                 360                 365

Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln
    370                 375                 380

Asn Gln Ser Asp Pro Lys Pro Glu Asn Pro Ala Cys Pro Trp Thr Val
385                 390                 395                 400

Leu Pro Ala Gly Asp Leu Pro Thr His Asp Gly Tyr Leu Pro Ser Asn
                405                 410                 415

Ile Asp Asp Leu Pro Ser His Glu Ala Pro Leu Ala Asp Ser Leu Glu
            420                 425                 430

Glu Leu Glu Pro Gln
        435
```

<210> 216
<211> 53

<212> PRT
<213> Artificial Sequence

<220>
<223> dimerization domain

<400> 216

Met Leu Gln Met Ala Gly Gln Cys Ser Gln Asn Glu Tyr Phe Asp Ser
1 5 10 15

Leu Leu His Ala Cys Ile Pro Cys Gln Leu Arg Cys Ser Ser Asn Thr
20 25 30

Pro Pro Leu Thr Cys Gln Arg Tyr Cys Asn Ala Ser Val Thr Asn Ser
35 40 45

Val Lys Gly Thr Asn
50

<210> 217
<211> 170
<212> PRT
<213> Artificial Sequence

<220>
<223> dimerization domain

<400> 217

Met Gln Ile Pro Gln Ala Pro Trp Pro Val Val Trp Ala Val Leu Gln
1 5 10 15

Leu Gly Trp Arg Pro Gly Trp Phe Leu Asp Ser Pro Asp Arg Pro Trp
20 25 30

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

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

Leu Asn Trp Tyr Arg Met Ser Pro Ser Asn Gln Thr Asp Lys Leu Ala
65 70 75 80

```
Ala Phe Pro Glu Asp Arg Ser Gln Pro Gly Gln Asp Cys Arg Phe Arg
                85                  90                  95

Val Thr Gln Leu Pro Asn Gly Arg Asp Phe His Met Ser Val Val Arg
            100                 105                 110

Ala Arg Arg Asn Asp Ser Gly Thr Tyr Leu Cys Gly Ala Ile Ser Leu
        115                 120                 125

Ala Pro Lys Ala Gln Ile Lys Glu Ser Leu Arg Ala Glu Leu Arg Val
    130                 135                 140

Thr Glu Arg Arg Ala Glu Val Pro Thr Ala His Pro Ser Pro Ser Pro
145                 150                 155                 160

Arg Pro Ala Gly Gln Phe Gln Thr Leu Val
                165                 170
```

<210> 218
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> dimerization domain

<400> 218

```
Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
1               5                   10                  15

Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
            20                  25                  30

Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys Phe
        35                  40                  45

Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
    50                  55                  60

Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
65                  70                  75                  80
```

Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
85 90 95

Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser
100 105

<210> 219
<211> 102
<212> PRT
<213> Artificial Sequence

<220>
<223> exemplary tyrosine kinase activating domain

<400> 219

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

Leu Thr Leu Ser Leu Ile Leu Val Val Ile Leu Val Leu Leu Thr Val
20 25 30

Leu Ala Leu Leu Ser His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro
35 40 45

Gly Ile Pro Ser Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His
50 55 60

Lys Gly Asn Phe Gln Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp
65 70 75 80

Trp Ser Pro Cys Thr Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu
85 90 95

Val Leu Ser Glu Arg Cys
100

<210> 220
<211> 348
<212> PRT
<213> Artificial Sequence

<220>
<223> exemplary tyrosine kinase activating domain

<400> 220

Gly Leu Glu Gly Cys Pro Thr Asn Gly Pro Lys Ile Pro Ser Ile Ala
1   5   10   15

Thr Gly Met Val Gly Ala Leu Leu Leu Leu Leu Val Val Ala Leu Gly
            20   25   30

Ile Gly Leu Phe Met Arg Arg Arg His Ile Val Arg Lys Arg Thr Leu
        35   40   45

Arg Arg Leu Leu Gln Glu Arg Glu Leu Val Glu Pro Leu Thr Pro Ser
    50   55   60

Gly Glu Ala Pro Asn Gln Ala Leu Leu Arg Ile Leu Lys Glu Thr Glu
65   70   75   80

Phe Lys Lys Ile Lys Val Leu Gly Ser Gly Ala Phe Gly Thr Val Tyr
                85   90   95

Lys Gly Leu Trp Ile Pro Glu Gly Glu Lys Val Lys Ile Pro Val Ala
            100   105   110

Ile Lys Glu Leu Arg Glu Ala Thr Ser Pro Lys Ala Asn Lys Glu Ile
        115   120   125

Leu Asp Glu Ala Tyr Val Met Ala Ser Val Asp Asn Pro His Val Cys
    130   135   140

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

Leu Met Pro Phe Gly Cys Leu Leu Asp Tyr Val Arg Glu His Lys Asp
                165   170   175

Asn Ile Gly Ser Gln Tyr Leu Leu Asn Trp Cys Val Gln Ile Ala Lys
            180   185   190

Gly Met Asn Tyr Leu Glu Asp Arg Arg Leu Val His Arg Asp Leu Ala
        195   200   205

```
Ala Arg Asn Val Leu Val Lys Thr Pro Gln His Val Lys Ile Thr Asp
    210                 215                 220

Phe Gly Leu Ala Lys Leu Leu Gly Ala Glu Glu Lys Glu Tyr His Ala
225                 230                 235                 240

Glu Gly Gly Lys Val Pro Ile Lys Trp Met Ala Leu Glu Ser Ile Leu
                245                 250                 255

His Arg Ile Tyr Thr His Gln Ser Asp Val Trp Ser Tyr Gly Val Thr
            260                 265                 270

Val Trp Glu Leu Met Thr Phe Gly Ser Lys Pro Tyr Asp Gly Ile Pro
        275                 280                 285

Ala Ser Glu Ile Ser Ser Ile Leu Glu Lys Gly Glu Arg Leu Pro Gln
    290                 295                 300

Pro Pro Ile Cys Thr Ile Asp Val Tyr Met Ile Met Val Lys Cys Trp
305                 310                 315                 320

Met Ile Asp Ala Asp Ser Arg Pro Lys Phe Arg Glu Leu Ile Ile Glu
                325                 330                 335

Phe Ser Lys Met Ala Arg Asp Pro Gln Arg Tyr Leu
            340                 345
```

<210> 221
<211> 219
<212> PRT
<213> Artificial Sequence

<220>
<223> exemplary tyrosine effector domain

<400> 221

```
Val Thr Gln Leu Leu Leu Gln Gln Asp Lys Val Pro Glu Pro Ala Ser
1               5                   10                  15

Leu Ser Ser Asn His Ser Leu Thr Ser Cys Phe Thr Asn Gln Gly Tyr
            20                  25                  30
```

```
Phe Phe Phe His Leu Pro Asp Ala Leu Glu Ile Glu Ala Cys Gln Val
        35                  40                  45

Tyr Phe Thr Tyr Asp Pro Tyr Ser Glu Glu Asp Pro Asp Glu Gly Val
    50                  55                  60

Ala Gly Ala Pro Thr Gly Ser Ser Pro Gln Pro Leu Gln Pro Leu Ser
65                  70                  75                  80

Gly Glu Asp Asp Ala Tyr Cys Thr Phe Pro Ser Arg Asp Asp Leu Leu
                85                  90                  95

Leu Phe Ser Pro Ser Leu Leu Gly Gly Pro Ser Pro Pro Ser Thr Ala
            100                 105                 110

Pro Gly Gly Ser Gly Ala Gly Glu Glu Arg Met Pro Pro Ser Leu Gln
        115                 120                 125

Glu Arg Val Pro Arg Asp Trp Asp Pro Gln Pro Leu Gly Pro Pro Thr
    130                 135                 140

Pro Gly Val Pro Asp Leu Val Asp Phe Gln Pro Pro Pro Glu Leu Val
145                 150                 155                 160

Leu Arg Glu Ala Gly Glu Glu Val Pro Asp Ala Gly Pro Arg Glu Gly
                165                 170                 175

Val Ser Phe Pro Trp Ser Arg Pro Pro Gly Gln Gly Glu Phe Arg Ala
            180                 185                 190

Leu Asn Ala Arg Leu Pro Leu Asn Thr Asp Ala Tyr Leu Ser Leu Gln
        195                 200                 205

Glu Leu Gln Gly Gln Asp Pro Thr His Leu Val
    210                 215
```

<210> 222
<211> 231
<212> PRT
<213> Artificial Sequence

<220>

<223> exemplary tyrosine effector domain

<400> 222

```
Val Ile Gln Gly Asp Glu Arg Met His Leu Pro Ser Pro Thr Asp Ser
1               5                  10                  15


Asn Phe Tyr Arg Ala Leu Met Asp Glu Glu Asp Met Asp Asp Val Val
            20                  25                  30


Asp Ala Asp Glu Tyr Leu Ile Pro Gln Gln Gly Phe Phe Ser Ser Pro
        35                  40                  45


Ser Thr Ser Arg Thr Pro Leu Leu Ser Ser Leu Ser Ala Thr Ser Asn
    50                  55                  60


Asn Ser Thr Val Ala Cys Ile Asp Arg Asn Gly Leu Gln Ser Cys Pro
65                  70                  75                  80


Ile Lys Glu Asp Ser Phe Leu Gln Arg Tyr Ser Ser Asp Pro Thr Gly
                85                  90                  95


Ala Leu Thr Glu Asp Ser Ile Asp Asp Thr Phe Leu Pro Val Pro Glu
            100                 105                 110


Tyr Ile Asn Gln Ser Val Pro Lys Arg Pro Ala Gly Ser Val Gln Asn
        115                 120                 125


Pro Val Tyr His Asn Gln Pro Leu Asn Pro Ala Pro Ser Arg Asp Pro
    130                 135                 140


His Tyr Gln Asp Pro His Ser Thr Ala Val Gly Asn Pro Glu Tyr Leu
145                 150                 155                 160


Asn Thr Val Gln Pro Thr Cys Val Asn Ser Thr Phe Asp Ser Pro Ala
                165                 170                 175


His Trp Ala Gln Lys Gly Ser His Gln Ile Ser Leu Asp Asn Pro Asp
            180                 185                 190


Tyr Gln Gln Asp Phe Phe Pro Lys Glu Ala Lys Pro Asn Gly Ile Phe
        195                 200                 205
```

```
Lys Gly Ser Thr Ala Glu Asn Ala Glu Tyr Leu Arg Val Ala Pro Gln
    210                 215                 220


Ser Ser Glu Phe Ile Gly Ala
225                 230


<210>  223
<211>  156
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  exemplary tyrosine effector domain

<400>  223

Ala Ser Glu Ser Pro Ala Asp Glu Glu Glu Gln Trp Ser Asp Asp Phe
1               5                   10                  15


Asp Ser Asp Tyr Glu Asn Pro Asp Glu His Ser Asp Ser Glu Met Tyr
            20                  25                  30


Val Met Pro Ala Glu Glu Asn Ala Asp Asp Ser Tyr Glu Pro Pro Pro
        35                  40                  45


Val Glu Gln Glu Thr Arg Pro Val His Pro Ala Leu Pro Phe Ala Arg
    50                  55                  60


Gly Glu Tyr Ile Asp Asn Arg Ser Ser Gln Arg His Ser Pro Pro Phe
65                  70                  75                  80


Ser Lys Thr Leu Pro Ser Lys Pro Ser Trp Pro Ser Glu Lys Ala Arg
                85                  90                  95


Leu Thr Ser Thr Leu Pro Ala Leu Thr Ala Leu Gln Lys Pro Gln Val
            100                 105                 110


Pro Pro Lys Pro Lys Gly Leu Leu Glu Asp Glu Ala Asp Tyr Val Val
        115                 120                 125


Pro Val Glu Asp Asn Asp Glu Asn Tyr Ile His Pro Thr Glu Ser Ser
    130                 135                 140
```

Ser Pro Pro Pro Glu Lys Ala Pro Met Val Asn Arg
145 150 155

<210> 224
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> peptide linker

<400> 224

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
1 5 10 15

<210> 225
<211> 380
<212> PRT
<213> Artificial Sequence

<220>
<223> FKBP(F36V)-EpoR(237-508;L241G,L242P)

<400> 225

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1 5 10 15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
20 25 30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
35 40 45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
50 55 60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65 70 75 80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
85 90 95

```
Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val
            100                 105                 110

Ser Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser
        115                 120                 125

Leu Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu
    130                 135                 140

Ser His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser
145                 150                 155                 160

Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe
                165                 170                 175

Gln Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys
            180                 185                 190

Thr Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu Val Leu Ser Glu
        195                 200                 205

Arg Cys Trp Gly Thr Met Gln Ala Val Glu Pro Gly Thr Asp Asp Glu
    210                 215                 220

Gly Pro Leu Leu Glu Pro Val Gly Ser Glu His Ala Gln Asp Thr Tyr
225                 230                 235                 240

Leu Val Leu Asp Lys Trp Leu Leu Pro Arg Asn Pro Pro Ser Glu Asp
                245                 250                 255

Leu Pro Gly Pro Gly Gly Ser Val Asp Ile Val Ala Met Asp Glu Gly
            260                 265                 270

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

Glu Gly Ala Ser Ala Ala Ser Phe Glu Tyr Thr Ile Leu Asp Pro Ser
    290                 295                 300

Ser Gln Leu Leu Arg Pro Trp Thr Leu Cys Pro Glu Leu Pro Pro Thr
305                 310                 315                 320
```

```
Pro Pro His Leu Lys Tyr Leu Tyr Leu Val Val Ser Asp Ser Gly Ile
                325                 330                 335


Ser Thr Asp Tyr Ser Ser Gly Asp Ser Gln Gly Ala Gln Gly Gly Leu
            340                 345                 350


Ser Asp Gly Pro Tyr Ser Asn Pro Tyr Glu Asn Ser Leu Ile Pro Ala
        355                 360                 365


Ala Glu Pro Leu Pro Pro Ser Tyr Val Ala Cys Ser
    370                 375                 380


<210>  226
<211>  450
<212>  PRT
<213>  Artificial Sequence

<220
<223>  EpoR(273-508)-FKBP(F36V)-FKBP(F36V)

<400>  226

Ser His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser
1               5                   10                  15


Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe
            20                  25                  30


Gln Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys
        35                  40                  45


Thr Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu Val Leu Ser Glu
    50                  55                  60


Arg Cys Trp Gly Thr Met Gln Ala Val Glu Pro Gly Thr Asp Asp Glu
65                  70                  75                  80


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


Leu Val Leu Asp Lys Trp Leu Leu Pro Arg Asn Pro Pro Ser Glu Asp
            100                 105                 110
```

```
Leu Pro Gly Pro Gly Gly Ser Val Asp Ile Val Ala Met Asp Glu Gly
        115                 120                 125

Ser Glu Ala Ser Ser Cys Ser Ser Ala Leu Ala Ser Lys Pro Ser Pro
    130                 135                 140

Glu Gly Ala Ser Ala Ala Ser Phe Glu Tyr Thr Ile Leu Asp Pro Ser
145                 150                 155                 160

Ser Gln Leu Leu Arg Pro Trp Thr Leu Cys Pro Glu Leu Pro Pro Thr
                165                 170                 175

Pro Pro His Leu Lys Tyr Leu Tyr Leu Val Val Ser Asp Ser Gly Ile
            180                 185                 190

Ser Thr Asp Tyr Ser Ser Gly Asp Ser Gln Gly Ala Gln Gly Gly Leu
        195                 200                 205

Ser Asp Gly Pro Tyr Ser Asn Pro Tyr Glu Asn Ser Leu Ile Pro Ala
    210                 215                 220

Ala Glu Pro Leu Pro Pro Ser Tyr Val Ala Cys Ser Met Gly Val Gln
225                 230                 235                 240

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

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

Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys Phe Met Leu Gly
        275                 280                 285

Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala Gln Met Ser
    290                 295                 300

Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr Ala Tyr Gly
305                 310                 315                 320
```

```
Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr Leu Val Phe
                325                 330                 335


Asp Val Glu Leu Leu Lys Leu Gly Val Gln Val Glu Thr Ile Ser Pro
            340                 345                 350


Gly Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His
        355                 360                 365


Tyr Thr Gly Met Leu Glu Asp Gly Lys Lys Val Asp Ser Ser Arg Asp
    370                 375                 380


Arg Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg
385                 390                 395                 400


Gly Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Arg Ala Lys
                405                 410                 415


Leu Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly
            420                 425                 430


Ile Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Lys
        435                 440                 445


Leu Glu
    450


<210>  227
<211>  450
<212>  PRT
<213>  Artificial Sequence

<220
<223>  EpoR(273-508)-FKBP(E31G,36V,R71G,K105E)-FKBP(E31G,36V,R71G,K105E)

<400>  227

Ser His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser
1               5                   10                  15


Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe
            20                  25                  30
```

```
Gln Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys
        35                  40                  45

Thr Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu Val Leu Ser Glu
    50                  55                  60

Arg Cys Trp Gly Thr Met Gln Ala Val Glu Pro Gly Thr Asp Asp Glu
65                  70                  75                  80

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

Leu Val Leu Asp Lys Trp Leu Leu Pro Arg Asn Pro Pro Ser Glu Asp
            100                 105                 110

Leu Pro Gly Pro Gly Gly Ser Val Asp Ile Val Ala Met Asp Glu Gly
        115                 120                 125

Ser Glu Ala Ser Ser Cys Ser Ser Ala Leu Ala Ser Lys Pro Ser Pro
    130                 135                 140

Glu Gly Ala Ser Ala Ala Ser Phe Glu Tyr Thr Ile Leu Asp Pro Ser
145                 150                 155                 160

Ser Gln Leu Leu Arg Pro Trp Thr Leu Cys Pro Glu Leu Pro Pro Thr
                165                 170                 175

Pro Pro His Leu Lys Tyr Leu Tyr Leu Val Val Ser Asp Ser Gly Ile
            180                 185                 190

Ser Thr Asp Tyr Ser Ser Gly Asp Ser Gln Gly Ala Gln Gly Gly Leu
        195                 200                 205

Ser Asp Gly Pro Tyr Ser Asn Pro Tyr Glu Asn Ser Leu Ile Pro Ala
    210                 215                 220

Ala Glu Pro Leu Pro Pro Ser Tyr Val Ala Cys Ser Met Gly Val Gln
225                 230                 235                 240

Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro Lys Arg Gly
                245                 250                 255
```

```
Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Gly Asp Gly Lys Lys
            260                 265                 270

Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys Phe Met Leu Gly
        275                 280                 285

Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala Gln Met Ser
    290                 295                 300

Val Gly Gln Gly Ala Lys Leu Thr Ile Ser Pro Asp Tyr Ala Tyr Gly
305                 310                 315                 320

Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr Leu Val Phe
                325                 330                 335

Asp Val Glu Leu Leu Glu Leu Gly Val Gln Val Glu Thr Ile Ser Pro
            340                 345                 350

Gly Asp Gly Arg Thr Phe Pro Lys Arg Gly Gln Thr Cys Val Val His
        355                 360                 365

Tyr Thr Gly Met Leu Gly Asp Gly Lys Lys Val Asp Ser Ser Arg Asp
    370                 375                 380

Arg Asn Lys Pro Phe Lys Phe Met Leu Gly Lys Gln Glu Val Ile Arg
385                 390                 395                 400

Gly Trp Glu Glu Gly Val Ala Gln Met Ser Val Gly Gln Gly Ala Lys
                405                 410                 415

Leu Thr Ile Ser Pro Asp Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly
            420                 425                 430

Ile Ile Pro Pro His Ala Thr Leu Val Phe Asp Val Glu Leu Leu Glu
        435                 440                 445

Leu Glu
    450
```

<210> 228
<211> 496
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)-EpoR(237-338;L241G,L242P)-GHR(353-638)

<400> 228

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1 5 10 15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
20 25 30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
35 40 45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
50 55 60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65 70 75 80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
85 90 95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val
100 105 110

Ser Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser
115 120 125

Leu Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu
130 135 140

Ser His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser
145 150 155 160

Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe
165 170 175

```
Gln Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys
            180                 185                 190

Thr Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu Val Leu Ser Glu
        195                 200                 205

Arg Cys Pro Asp Glu Lys Thr Glu Glu Ser Asp Thr Asp Arg Leu Leu
    210                 215                 220

Ser Ser Asp His Glu Lys Ser His Ser Asn Leu Gly Val Lys Asp Gly
225                 230                 235                 240

Asp Ser Gly Arg Thr Ser Cys Cys Glu Pro Asp Ile Leu Glu Thr Asp
                245                 250                 255

Phe Asn Ala Asn Asp Ile His Glu Gly Thr Ser Glu Val Ala Gln Pro
            260                 265                 270

Gln Arg Leu Lys Gly Glu Ala Asp Leu Leu Cys Leu Asp Gln Lys Asn
        275                 280                 285

Gln Asn Asn Ser Pro Tyr His Asp Ala Cys Pro Ala Thr Gln Gln Pro
    290                 295                 300

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

Gly Ala Glu Ser Thr His Gln Ala Ala His Ile Gln Leu Ser Asn Pro
                325                 330                 335

Ser Ser Leu Ser Asn Ile Asp Phe Tyr Ala Gln Val Ser Asp Ile Thr
            340                 345                 350

Pro Ala Gly Ser Val Val Leu Ser Pro Gly Gln Lys Asn Lys Ala Gly
        355                 360                 365

Met Ser Gln Cys Asp Met His Pro Glu Met Val Ser Leu Cys Gln Glu
    370                 375                 380

Asn Phe Leu Met Asp Asn Ala Tyr Phe Cys Glu Ala Asp Ala Lys Lys
385                 390                 395                 400
```

```
Cys Ile Pro Val Ala Pro His Ile Lys Val Glu Ser His Ile Gln Pro
                405                 410                 415


Ser Leu Asn Gln Glu Asp Ile Tyr Ile Thr Thr Glu Ser Leu Thr Thr
            420                 425                 430


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


Pro Val Pro Asp Tyr Thr Ser Ile His Ile Val Gln Ser Pro Gln Gly
    450                 455                 460


Leu Ile Leu Asn Ala Thr Ala Leu Pro Leu Pro Asp Lys Glu Phe Leu
465                 470                 475                 480


Ser Ser Cys Gly Tyr Val Ser Thr Asp Gln Leu Asn Lys Ile Met Pro
                485                 490                 495


<210>  229
<211>  429
<212>  PRT
<213>  Artificial Sequence

<220
<223>  FKBP(F36V)-EpoR(237-338;L241G,L242P)-IL2Rb(333-551)

<400>  229

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                   10                  15


Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30


Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45


Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60


Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80
```

```
Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val
            100                 105                 110

Ser Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser
        115                 120                 125

Leu Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu
    130                 135                 140

Ser His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser
145                 150                 155                 160

Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe
                165                 170                 175

Gln Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys
            180                 185                 190

Thr Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu Val Leu Ser Glu
        195                 200                 205

Arg Cys Val Thr Gln Leu Leu Leu Gln Gln Asp Lys Val Pro Glu Pro
    210                 215                 220

Ala Ser Leu Ser Ser Asn His Ser Leu Thr Ser Cys Phe Thr Asn Gln
225                 230                 235                 240

Gly Tyr Phe Phe Phe His Leu Pro Asp Ala Leu Glu Ile Glu Ala Cys
                245                 250                 255

Gln Val Tyr Phe Thr Tyr Asp Pro Tyr Ser Glu Glu Asp Pro Asp Glu
            260                 265                 270

Gly Val Ala Gly Ala Pro Thr Gly Ser Ser Pro Gln Pro Leu Gln Pro
        275                 280                 285
```

```
Leu Ser Gly Glu Asp Asp Ala Tyr Cys Thr Phe Pro Ser Arg Asp Asp
    290                 295                 300

Leu Leu Leu Phe Ser Pro Ser Leu Leu Gly Gly Pro Ser Pro Pro Ser
305                 310                 315                 320

Thr Ala Pro Gly Gly Ser Gly Ala Gly Glu Glu Arg Met Pro Pro Ser
                325                 330                 335

Leu Gln Glu Arg Val Pro Arg Asp Trp Asp Pro Gln Pro Leu Gly Pro
            340                 345                 350

Pro Thr Pro Gly Val Pro Asp Leu Val Asp Phe Gln Pro Pro Pro Glu
        355                 360                 365

Leu Val Leu Arg Glu Ala Gly Glu Glu Val Pro Asp Ala Gly Pro Arg
    370                 375                 380

Glu Gly Val Ser Phe Pro Trp Ser Arg Pro Pro Gly Gln Gly Glu Phe
385                 390                 395                 400

Arg Ala Leu Asn Ala Arg Leu Pro Leu Asn Thr Asp Ala Tyr Leu Ser
                405                 410                 415

Leu Gln Glu Leu Gln Gly Gln Asp Pro Thr His Leu Val
            420                 425
```

<210> 230
<211> 354
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)-EpoR(237-338;L241G,L242P)-IL7R(316-459)

<400> 230

```
Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                   10                  15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30
```

```
Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val
            100                 105                 110

Ser Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser
        115                 120                 125

Leu Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu
    130                 135                 140

Ser His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser
145                 150                 155                 160

Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe
                165                 170                 175

Gln Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys
            180                 185                 190

Thr Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu Val Leu Ser Glu
        195                 200                 205

Arg Cys Ala Arg Asp Glu Val Glu Gly Phe Leu Gln Asp Thr Phe Pro
    210                 215                 220

Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly Asp Val Gln
225                 230                 235                 240

Ser Pro Asn Cys Pro Ser Glu Asp Val Val Ile Thr Pro Glu Ser Phe
                245                 250                 255
```

Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn Val Ser Ala Cys
260 265 270

Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg Glu Ser
275 280 285

Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu Ser Leu Gly
290 295 300

Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln Ser Gly Ile
305 310 315 320

Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu Thr Ser Leu
325 330 335

Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln
340 345 350

Asn Gln

<210> 231
<211> 359
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)-EpoR(237-338;L241G,L242P)-IL12Rb2(714-862)

<400> 231

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1 5 10 15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
20 25 30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
35 40 45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
50 55 60

```
Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val
            100                 105                 110

Ser Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser
        115                 120                 125

Leu Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu
    130                 135                 140

Ser His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser
145                 150                 155                 160

Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe
                165                 170                 175

Gln Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys
            180                 185                 190

Thr Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu Val Leu Ser Glu
        195                 200                 205

Arg Cys Val Thr Pro Val Phe Arg His Pro Pro Cys Ser Asn Trp Pro
    210                 215                 220

Gln Arg Glu Lys Gly Ile Gln Gly His Gln Ala Ser Glu Lys Asp Met
225                 230                 235                 240

Met His Ser Ala Ser Ser Pro Pro Pro Pro Arg Ala Leu Gln Ala Glu
                245                 250                 255

Ser Arg Gln Leu Val Asp Leu Tyr Lys Val Leu Glu Ser Arg Gly Ser
            260                 265                 270
```

Asp Pro Lys Pro Glu Asn Pro Ala Cys Pro Trp Thr Val Leu Pro Ala
        275   280   285

Gly Asp Leu Pro Thr His Asp Gly Tyr Leu Pro Ser Asn Ile Asp Asp
    290   295   300

Leu Pro Ser His Glu Ala Pro Leu Ala Asp Ser Leu Glu Glu Leu Glu
305   310   315   320

Pro Gln His Ile Ser Leu Ser Val Phe Pro Ser Ser Ser Leu His Pro
                325   330   335

Leu Thr Phe Ser Cys Gly Asp Lys Leu Thr Leu Asp Gln Leu Lys Met
            340   345   350

Arg Cys Asp Ser Leu Met Leu
        355

<210> 232
<211> 261
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)-EpoR(237-338;L241G,L242P)-IL12Rb2(775-825)

<400> 232

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1   5   10   15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20   25   30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35   40   45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50   55   60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65   70   75   80

```
Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val
            100                 105                 110

Ser Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser
        115                 120                 125

Leu Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu
    130                 135                 140

Ser His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser
145                 150                 155                 160

Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe
                165                 170                 175

Gln Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys
            180                 185                 190

Thr Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu Val Leu Ser Glu
        195                 200                 205

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

Leu Pro Ala Gly Asp Leu Pro Thr His Asp Gly Tyr Leu Pro Ser Asn
225                 230                 235                 240

Ile Asp Asp Leu Pro Ser His Glu Ala Pro Leu Ala Asp Ser Leu Glu
                245                 250                 255

Glu Leu Glu Pro Gln
            260
```

<210> 233
<211> 427
<212> PRT
<213> Artificial Sequence

<220

<223> FKBP(F36V)-EpoR(237-338;L241G,L242P)-IL21R(322-538)

<400> 233

```
Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                  10                  15


Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30


Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45


Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60


Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80


Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95


Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val
            100                 105                 110


Ser Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser
        115                 120                 125


Leu Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu
    130                 135                 140


Ser His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser
145                 150                 155                 160


Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe
                165                 170                 175


Gln Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys
            180                 185                 190


Thr Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu Val Leu Ser Glu
        195                 200                 205
```

```
Arg Cys Pro Arg Ser Pro Ala Lys Arg Leu Gln Leu Thr Glu Leu Gln
    210                 215                 220

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

Trp Pro Thr Ala Gln Asn Ser Gly Gly Ser Ala Tyr Ser Glu Glu Arg
                245                 250                 255

Asp Arg Pro Tyr Gly Leu Val Ser Ile Asp Thr Val Thr Val Leu Asp
            260                 265                 270

Ala Glu Gly Pro Cys Thr Trp Pro Cys Ser Cys Glu Asp Asp Gly Tyr
        275                 280                 285

Pro Ala Leu Asp Leu Asp Ala Gly Leu Glu Pro Ser Pro Gly Leu Glu
    290                 295                 300

Asp Pro Leu Leu Asp Ala Gly Thr Thr Val Leu Ser Cys Gly Cys Val
305                 310                 315                 320

Ser Ala Gly Ser Pro Gly Leu Gly Gly Pro Leu Gly Ser Leu Leu Asp
                325                 330                 335

Arg Leu Lys Pro Pro Leu Ala Asp Gly Glu Asp Trp Ala Gly Gly Leu
            340                 345                 350

Pro Trp Gly Gly Arg Ser Pro Gly Gly Val Ser Glu Ser Glu Ala Gly
        355                 360                 365

Ser Pro Leu Ala Gly Leu Asp Met Asp Thr Phe Asp Ser Gly Phe Val
    370                 375                 380

Gly Ser Asp Cys Ser Ser Pro Val Glu Cys Asp Phe Thr Ser Pro Gly
385                 390                 395                 400

Asp Glu Gly Pro Pro Arg Ser Tyr Leu Arg Gln Trp Val Val Ile Pro
                405                 410                 415
```

Pro Pro Leu Ser Ser Pro Gly Pro Gln Ala Ser
420 425

<210> 234
<211> 416
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)-EpoR(237-338;L241G,L242P)-IFNAR2(310-515)

<400> 234

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1 5 10 15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
20 25 30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
35 40 45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
50 55 60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65 70 75 80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
85 90 95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val
100 105 110

Ser Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser
115 120 125

Leu Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu
130 135 140

Ser His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser
145 150 155 160

```
Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe
                165                 170                 175

Gln Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys
            180                 185                 190

Thr Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu Val Leu Ser Glu
        195                 200                 205

Arg Cys Lys Lys Lys Val Trp Asp Tyr Asn Tyr Asp Asp Glu Ser Asp
    210                 215                 220

Ser Asp Thr Glu Ala Ala Pro Arg Thr Ser Gly Gly Gly Tyr Thr Met
225                 230                 235                 240

His Gly Leu Thr Val Arg Pro Leu Gly Gln Ala Ser Ala Thr Ser Thr
                245                 250                 255

Glu Ser Gln Leu Ile Asp Pro Glu Ser Glu Glu Glu Pro Asp Leu Pro
            260                 265                 270

Glu Val Asp Val Glu Leu Pro Thr Met Pro Lys Asp Ser Pro Gln Gln
        275                 280                 285

Leu Glu Leu Leu Ser Gly Pro Cys Glu Arg Arg Lys Ser Pro Leu Gln
    290                 295                 300

Asp Pro Phe Pro Glu Glu Asp Tyr Ser Ser Thr Glu Gly Ser Gly Gly
305                 310                 315                 320

Arg Ile Thr Phe Asn Val Asp Leu Asn Ser Val Phe Leu Arg Val Leu
                325                 330                 335

Asp Asp Glu Asp Ser Asp Asp Leu Glu Ala Pro Leu Met Leu Ser Ser
            340                 345                 350

His Leu Glu Glu Met Val Asp Pro Glu Asp Pro Asp Asn Val Gln Ser
        355                 360                 365

Asn His Leu Leu Ala Ser Gly Glu Gly Thr Gln Pro Thr Phe Pro Ser
    370                 375                 380
```

```
Pro Ser Ser Glu Gly Leu Trp Ser Glu Asp Ala Pro Ser Asp Gln Ser
385                 390                 395                 400


Asp Thr Ser Glu Ser Asp Val Asp Leu Gly Asp Gly Tyr Ile Met Arg
                405                 410                 415


<210>  235
<211>  431
<212>  PRT
<213>  Artificial Sequence

<220
<223>  FKBP(F36V)-EpoR(237-338;L241G,L242P)-IFNAR1(300-520)

<400>  235

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                   10                  15


Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30


Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45


Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60


Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80


Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95


Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val
            100                 105                 110


Ser Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser
        115                 120                 125


Leu Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu
    130                 135                 140
```

```
Ser His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser
145                 150                 155                 160

Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe
                165                 170                 175

Gln Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys
            180                 185                 190

Thr Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu Val Leu Ser Glu
        195                 200                 205

Arg Cys Arg Gly Val Arg Pro Thr Pro Arg Val Arg Ala Pro Ala Thr
    210                 215                 220

Gln Gln Thr Arg Trp Lys Lys Asp Leu Ala Glu Asp Glu Glu Glu Glu
225                 230                 235                 240

Asp Glu Glu Asp Thr Glu Asp Gly Val Ser Phe Gln Pro Tyr Ile Glu
                245                 250                 255

Pro Pro Ser Phe Leu Gly Gln Glu His Gln Ala Pro Gly His Ser Glu
            260                 265                 270

Ala Gly Gly Val Asp Ser Gly Arg Pro Arg Ala Pro Leu Val Pro Ser
        275                 280                 285

Glu Gly Ser Ser Ala Trp Asp Ser Ser Asp Arg Ser Trp Ala Ser Thr
    290                 295                 300

Val Asp Ser Ser Trp Asp Arg Ala Gly Ser Ser Gly Tyr Leu Ala Glu
305                 310                 315                 320

Lys Gly Pro Gly Gln Gly Pro Gly Gly Asp Gly His Gln Glu Ser Leu
                325                 330                 335

Pro Pro Pro Glu Phe Ser Lys Asp Ser Gly Phe Leu Glu Glu Leu Pro
            340                 345                 350
```

```
Glu Asp Asn Leu Ser Ser Trp Ala Thr Trp Gly Thr Leu Pro Pro Glu
        355                 360                 365

Pro Asn Leu Val Pro Gly Gly Pro Pro Val Ser Leu Gln Thr Leu Thr
    370                 375                 380

Phe Cys Trp Glu Ser Ser Pro Glu Glu Glu Glu Glu Ala Arg Glu Ser
385                 390                 395                 400

Glu Ile Glu Asp Ser Asp Ala Gly Ser Trp Gly Ala Glu Ser Thr Gln
                405                 410                 415

Arg Thr Glu Asp Arg Gly Arg Thr Leu Gly His Tyr Met Ala Arg
            420                 425                 430
```

<210> 236
<211> 413
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)-muEpoR(236-337;L264G,L265P)-muIL2Rb(337-539)

<400> 236

```
Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                   10                  15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95
```

```
Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Ala
            100                 105                 110

Ser Leu Leu Thr Ala Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser
        115                 120                 125

Leu Ile Leu Val Leu Ile Ser Leu Gly Pro Thr Val Leu Ala Leu Leu
    130                 135                 140

Ser His Arg Arg Thr Leu Gln Gln Lys Ile Trp Pro Gly Ile Pro Ser
145                 150                 155                 160

Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe
                165                 170                 175

Gln Leu Trp Leu Leu Gln Arg Asp Gly Cys Leu Trp Trp Ser Pro Gly
            180                 185                 190

Ser Ser Phe Pro Glu Asp Pro Pro Ala His Leu Glu Val Leu Ser Glu
        195                 200                 205

Pro Arg Ala Val Gln Leu Leu Leu Leu Gln Lys Asp Ser Ala Pro Leu
    210                 215                 220

Pro Ser Pro Ser Gly His Ser Gln Ala Ser Cys Phe Thr Asn Gln Gly
225                 230                 235                 240

Tyr Phe Phe Phe His Leu Pro Asn Ala Leu Glu Ile Glu Ser Cys Gln
                245                 250                 255

Val Tyr Phe Thr Tyr Asp Pro Cys Val Glu Glu Glu Val Glu Glu Asp
            260                 265                 270

Gly Ser Arg Leu Pro Glu Gly Ser Pro His Pro Pro Leu Leu Pro Leu
        275                 280                 285

Ala Gly Glu Gln Asp Asp Tyr Cys Ala Phe Pro Pro Arg Asp Asp Leu
    290                 295                 300

Leu Leu Phe Ser Pro Ser Leu Ser Thr Pro Asn Thr Ala Tyr Gly Gly
305                 310                 315                 320
```

Ser Arg Ala Pro Glu Glu Arg Ser Pro Leu Ser Leu His Glu Gly Leu
325 330 335

Pro Ser Leu Ala Ser Arg Asp Leu Met Gly Leu Gln Arg Pro Leu Glu
340 345 350

Arg Met Pro Glu Gly Asp Gly Glu Gly Leu Ser Ala Asn Ser Ser Gly
355 360 365

Glu Gln Ala Ser Val Pro Glu Gly Asn Leu His Gly Gln Asp Gln Asp
370 375 380

Arg Gly Gln Gly Pro Ile Leu Thr Leu Asn Thr Asp Ala Tyr Leu Ser
385 390 395 400

Leu Gln Glu Leu Gln Ala Gln Asp Ser Val His Leu Ile
405 410

<210> 237
<211> 354
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)-muEpoR(236-337;L264G,L265P)-muIL7R(316-459)

<400> 237

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1 5 10 15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
20 25 30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
35 40 45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
50 55 60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65 70 75 80

```
Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95

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

Ser Leu Leu Thr Ala Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser
        115                 120                 125

Leu Ile Leu Val Leu Ile Ser Leu Gly Pro Thr Val Leu Ala Leu Leu
    130                 135                 140

Ser His Arg Arg Thr Leu Gln Gln Lys Ile Trp Pro Gly Ile Pro Ser
145                 150                 155                 160

Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe
                165                 170                 175

Gln Leu Trp Leu Leu Gln Arg Asp Gly Cys Leu Trp Trp Ser Pro Gly
            180                 185                 190

Ser Ser Phe Pro Glu Asp Pro Pro Ala His Leu Glu Val Leu Ser Glu
        195                 200                 205

Pro Arg Ala Arg Asp Glu Val Glu Ser Phe Leu Pro Asn Asp Leu Pro
    210                 215                 220

Ala Gln Pro Glu Glu Leu Glu Thr Gln Gly His Arg Ala Ala Val His
225                 230                 235                 240

Ser Ala Asn Arg Ser Pro Glu Thr Ser Val Ser Pro Pro Glu Thr Val
                245                 250                 255

Arg Arg Glu Ser Pro Leu Arg Cys Leu Ala Arg Asn Leu Ser Thr Cys
            260                 265                 270

Asn Ala Pro Pro Leu Leu Ser Ser Arg Ser Pro Asp Tyr Arg Asp Gly
        275                 280                 285
```

Asp Arg Asn Arg Pro Pro Val Tyr Gln Asp Leu Leu Pro Asn Ser Gly
290 295 300

Asn Thr Asn Val Pro Val Pro Val Pro Gln Pro Leu Pro Phe Gln Ser
305 310 315 320

Gly Ile Leu Ile Pro Val Ser Gln Arg Gln Pro Ile Ser Thr Ser Ser
325 330 335

Val Leu Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln
340 345 350

Asn Lys

<210> 238
<211> 405
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)-EpoR(237-338;L241G,L242P)-IL7R(316-459)-IL12Rb2(775-825)

<400> 238

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1 5 10 15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
20 25 30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
35 40 45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
50 55 60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65 70 75 80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
85 90 95

```
Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val
            100                 105                 110

Ser Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser
        115                 120                 125

Leu Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu
    130                 135                 140

Ser His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser
145                 150                 155                 160

Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe
                165                 170                 175

Gln Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys
            180                 185                 190

Thr Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu Val Leu Ser Glu
        195                 200                 205

Arg Cys Ala Arg Asp Glu Val Glu Gly Phe Leu Gln Asp Thr Phe Pro
    210                 215                 220

Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly Asp Val Gln
225                 230                 235                 240

Ser Pro Asn Cys Pro Ser Glu Asp Val Val Ile Thr Pro Glu Ser Phe
                245                 250                 255

Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn Val Ser Ala Cys
            260                 265                 270

Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg Glu Ser
        275                 280                 285

Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu Ser Leu Gly
    290                 295                 300

Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln Ser Gly Ile
305                 310                 315                 320
```

```
Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu Thr Ser Leu
                325                 330                 335

Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln
            340                 345                 350

Asn Gln Ser Asp Pro Lys Pro Glu Asn Pro Ala Cys Pro Trp Thr Val
        355                 360                 365

Leu Pro Ala Gly Asp Leu Pro Thr His Asp Gly Tyr Leu Pro Ser Asn
    370                 375                 380

Ile Asp Asp Leu Pro Ser His Glu Ala Pro Leu Ala Asp Ser Leu Glu
385                 390                 395                 400

Glu Leu Glu Pro Gln
                405
```

<210> 239
<211> 395
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)-GP130(609-700)-IL7R(316-459)-IL12Rb2(775-825)

<400> 239

```
Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                   10                  15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80
```

```
Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Thr Thr Pro Lys
            100                 105                 110

Phe Ala Gln Gly Glu Ile Glu Ala Ile Val Val Pro Val Cys Leu Ala
        115                 120                 125

Phe Leu Leu Thr Thr Leu Leu Gly Val Leu Phe Cys Phe Asn Lys Arg
    130                 135                 140

Asp Leu Ile Lys Lys His Ile Trp Pro Asn Val Pro Asp Pro Ser Lys
145                 150                 155                 160

Ser His Ile Ala Gln Trp Ser Pro His Thr Pro Pro Arg His Asn Phe
                165                 170                 175

Asn Ser Lys Asp Gln Met Tyr Ser Asp Gly Asn Phe Thr Asp Val Ser
            180                 185                 190

Val Val Glu Ile Glu Ala Asn Asp Ala Arg Asp Glu Val Glu Gly Phe
        195                 200                 205

Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg
    210                 215                 220

Leu Gly Gly Asp Val Gln Ser Pro Asn Cys Pro Ser Glu Asp Val Val
225                 230                 235                 240

Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala
                245                 250                 255

Gly Asn Val Ser Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser
            260                 265                 270

Leu Asp Cys Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr Gln Asp
        275                 280                 285
```

```
Leu Leu Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe
    290                 295                 300

Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly Gln
305                 310                 315                 320

Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr
                325                 330                 335

Met Ser Ser Phe Tyr Gln Asn Gln Ser Asp Pro Lys Pro Glu Asn Pro
            340                 345                 350

Ala Cys Pro Trp Thr Val Leu Pro Ala Gly Asp Leu Pro Thr His Asp
        355                 360                 365

Gly Tyr Leu Pro Ser Asn Ile Asp Asp Leu Pro Ser His Glu Ala Pro
    370                 375                 380

Leu Ala Asp Ser Leu Glu Glu Leu Glu Pro Gln
385                 390                 395
```

<210> 240
<211> 402
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)-PrlR(221-319)-IL7R(316-459)-IL12Rb2(775-825)

<400> 240

```
Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                   10                  15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60
```

```
Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ala Thr Phe Ile
            100                 105                 110

Gln Ile Pro Ser Asp Phe Thr Met Asn Asp Thr Thr Val Trp Ile Ser
        115                 120                 125

Val Ala Val Leu Ser Ala Val Ile Cys Leu Ile Ile Val Trp Ala Val
    130                 135                 140

Ala Leu Lys Gly Tyr Ser Met Val Thr Cys Ile Phe Pro Pro Val Pro
145                 150                 155                 160

Gly Pro Lys Ile Lys Gly Phe Asp Ala His Leu Leu Glu Lys Gly Lys
                165                 170                 175

Ser Glu Glu Leu Leu Ser Ala Leu Gly Cys Gln Asp Phe Pro Pro Thr
            180                 185                 190

Ser Asp Tyr Glu Asp Leu Leu Val Glu Tyr Leu Glu Val Asp Asp Ala
        195                 200                 205

Arg Asp Glu Val Glu Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu
    210                 215                 220

Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly Asp Val Gln Ser Pro Asn
225                 230                 235                 240

Cys Pro Ser Glu Asp Val Val Ile Thr Pro Glu Ser Phe Gly Arg Asp
                245                 250                 255

Ser Ser Leu Thr Cys Leu Ala Gly Asn Val Ser Ala Cys Asp Ala Pro
            260                 265                 270

Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg Glu Ser Gly Lys Asn
        275                 280                 285
```

```
Gly Pro His Val Tyr Gln Asp Leu Leu Leu Ser Leu Gly Thr Thr Asn
    290                 295                 300

Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu
305                 310                 315                 320

Asn Pro Val Ala Gln Gly Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn
                325                 330                 335

Gln Glu Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln Asn Gln Ser
            340                 345                 350

Asp Pro Lys Pro Glu Asn Pro Ala Cys Pro Trp Thr Val Leu Pro Ala
        355                 360                 365

Gly Asp Leu Pro Thr His Asp Gly Tyr Leu Pro Ser Asn Ile Asp Asp
    370                 375                 380

Leu Pro Ser His Glu Ala Pro Leu Ala Asp Ser Leu Glu Glu Leu Glu
385                 390                 395                 400

Pro Gln
```

<210> 241
<211> 405
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)-GHR(251-352)-IL7R(316-459)-IL12Rb2(775-825)

<400> 241

```
Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                   10                  15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45
```

```
Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Leu Pro Gln Met
            100                 105                 110

Ser Gln Phe Thr Cys Glu Glu Asp Phe Tyr Phe Pro Trp Leu Leu Ile
        115                 120                 125

Ile Ile Phe Gly Ile Phe Gly Leu Thr Val Met Leu Phe Val Phe Leu
    130                 135                 140

Phe Ser Lys Gln Gln Arg Ile Lys Met Leu Ile Leu Pro Pro Val Pro
145                 150                 155                 160

Val Pro Lys Ile Lys Gly Ile Asp Pro Asp Leu Leu Lys Glu Gly Lys
                165                 170                 175

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

Glu Phe His Ser Asp Asp Ser Trp Val Glu Phe Ile Glu Leu Asp Ile
        195                 200                 205

Asp Glu Ala Arg Asp Glu Val Glu Gly Phe Leu Gln Asp Thr Phe Pro
    210                 215                 220

Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly Asp Val Gln
225                 230                 235                 240

Ser Pro Asn Cys Pro Ser Glu Asp Val Val Ile Thr Pro Glu Ser Phe
                245                 250                 255
```

```
Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn Val Ser Ala Cys
            260                 265                 270

Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg Glu Ser
        275                 280                 285

Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu Ser Leu Gly
    290                 295                 300

Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln Ser Gly Ile
305                 310                 315                 320

Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu Thr Ser Leu
                325                 330                 335

Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln
            340                 345                 350

Asn Gln Ser Asp Pro Lys Pro Glu Asn Pro Ala Cys Pro Trp Thr Val
        355                 360                 365

Leu Pro Ala Gly Asp Leu Pro Thr His Asp Gly Tyr Leu Pro Ser Asn
    370                 375                 380

Ile Asp Asp Leu Pro Ser His Glu Ala Pro Leu Ala Asp Ser Leu Glu
385                 390                 395                 400

Glu Leu Glu Pro Gln
                405
```

<210> 242
<211> 400
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)-GCSFR(614-710)-IL7R(316-459)-IL12Rb2(775-825)

<400> 242

```
Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                   10                  15
```

```
Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Leu Thr Leu Met
            100                 105                 110

Thr Leu Thr Pro Glu Gly Ser Glu Leu His Ile Ile Leu Gly Leu Phe
        115                 120                 125

Gly Leu Leu Leu Leu Leu Thr Cys Leu Cys Gly Thr Ala Trp Leu Cys
    130                 135                 140

Cys Ser Pro Asn Arg Lys Asn Pro Leu Trp Pro Ser Val Pro Asp Pro
145                 150                 155                 160

Ala His Ser Ser Leu Gly Ser Trp Val Pro Thr Ile Met Glu Glu Asp
                165                 170                 175

Ala Phe Gln Leu Pro Gly Leu Gly Thr Pro Pro Ile Thr Lys Leu Thr
            180                 185                 190

Val Leu Glu Glu Asp Glu Lys Lys Pro Val Pro Trp Glu Ala Arg Asp
        195                 200                 205

Glu Val Glu Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu
    210                 215                 220

Ser Glu Lys Gln Arg Leu Gly Gly Asp Val Gln Ser Pro Asn Cys Pro
225                 230                 235                 240
```

Ser Glu Asp Val Val Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser Ser
245 250 255

Leu Thr Cys Leu Ala Gly Asn Val Ser Ala Cys Asp Ala Pro Ile Leu
260 265 270

Ser Ser Ser Arg Ser Leu Asp Cys Arg Glu Ser Gly Lys Asn Gly Pro
275 280 285

His Val Tyr Gln Asp Leu Leu Leu Ser Leu Gly Thr Thr Asn Ser Thr
290 295 300

Leu Pro Pro Pro Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro
305 310 315 320

Val Ala Gln Gly Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu
325 330 335

Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln Asn Gln Ser Asp Pro
340 345 350

Lys Pro Glu Asn Pro Ala Cys Pro Trp Thr Val Leu Pro Ala Gly Asp
355 360 365

Leu Pro Thr His Asp Gly Tyr Leu Pro Ser Asn Ile Asp Asp Leu Pro
370 375 380

Ser His Glu Ala Pro Leu Ala Asp Ser Leu Glu Glu Leu Glu Pro Gln
385 390 395 400

<210> 243
<211> 408
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)-TPOR/MPLR(478-582)-IL7R(316-459)-IL12Rb2(775-825)

<400> 243

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1 5 10 15

```
Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
            100                 105                 110

Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile Ser Leu Val Thr Ala
        115                 120                 125

Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu
    130                 135                 140

Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp
145                 150                 155                 160

Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp
                165                 170                 175

Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys Glu
            180                 185                 190

Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg
        195                 200                 205

Thr Pro Leu Pro Leu Ala Arg Asp Glu Val Glu Gly Phe Leu Gln Asp
    210                 215                 220
```

```
Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly
225                 230                 235                 240


Asp Val Gln Ser Pro Asn Cys Pro Ser Glu Asp Val Val Ile Thr Pro
                245                 250                 255


Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn Val
            260                 265                 270


Ser Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys
        275                 280                 285


Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu
    290                 295                 300


Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln
305                 310                 315                 320


Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu
                325                 330                 335


Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser
            340                 345                 350


Phe Tyr Gln Asn Gln Ser Asp Pro Lys Pro Glu Asn Pro Ala Cys Pro
        355                 360                 365


Trp Thr Val Leu Pro Ala Gly Asp Leu Pro Thr His Asp Gly Tyr Leu
    370                 375                 380


Pro Ser Asn Ile Asp Asp Leu Pro Ser His Glu Ala Pro Leu Ala Asp
385                 390                 395                 400


Ser Leu Glu Glu Leu Glu Pro Gln
                405
```

<210> 244
<211> 251
<212> PRT
<213> Artificial Sequence

<220

<223> FKBP(F36V)- EpoR(237-338;L241G,L242P)-IL7R(376-416)

<400> 244

```
Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                  10                  15


Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30


Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45


Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60


Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80


Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95


Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val
            100                 105                 110


Ser Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser
        115                 120                 125


Leu Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu
    130                 135                 140


Ser His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser
145                 150                 155                 160


Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe
                165                 170                 175


Gln Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys
            180                 185                 190


Thr Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu Val Leu Ser Glu
        195                 200                 205
```

Arg Cys Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp
    210   215   220

Cys Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu
225   230   235   240

Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro
                245   250

<210> 245
<211> 246
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)- EpoR(237-338;L241G,L242P)-IL7R(424-459)

<400> 245

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1   5   10   15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20   25   30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35   40   45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50   55   60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65   70   75   80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85   90   95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val
            100   105   110

Ser Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser
        115   120   125

```
Leu Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu
    130                 135                 140


Ser His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser
145                 150                 155                 160


Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe
                165                 170                 175


Gln Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys
            180                 185                 190


Thr Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu Val Leu Ser Glu
        195                 200                 205


Arg Cys Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile
    210                 215                 220


Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser
225                 230                 235                 240


Ser Phe Tyr Gln Asn Gln
                245
```

<210> 246
<211> 278
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)- EpoR(237-338;L241G,L242P)-IL7R(376-416,424-459)

<400> 246

```
Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                   10                  15


Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30


Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45
```

```
Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val
            100                 105                 110

Ser Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser
        115                 120                 125

Leu Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu
    130                 135                 140

Ser His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser
145                 150                 155                 160

Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe
                165                 170                 175

Gln Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys
            180                 185                 190

Thr Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu Val Leu Ser Glu
        195                 200                 205

Arg Cys Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp
    210                 215                 220

Cys Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu
225                 230                 235                 240

Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Gln Gly Gln Pro Ile
                245                 250                 255
```

Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser
260 265 270

Ser Phe Tyr Gln Asn Gln
275

<210> 247
<211> 246
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)- EpoR(237-338;L241G,L242P)-IL7R(424-459;Y456F)

<400> 247

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1 5 10 15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
20 25 30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
35 40 45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
50 55 60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65 70 75 80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
85 90 95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val
100 105 110

Ser Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser
115 120 125

Leu Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu
130 135 140

```
Ser His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser
145                 150                 155                 160


Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe
                165                 170                 175


Gln Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys
            180                 185                 190


Thr Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu Val Leu Ser Glu
        195                 200                 205


Arg Cys Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile
    210                 215                 220


Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser
225                 230                 235                 240


Ser Phe Phe Gln Asn Gln
                245


<210>  248
<211>  278
<212>  PRT
<213>  Artificial Sequence

<220
<223>  FKBP(F36V)- EpoR(237-338;L241G,L242P)-IL7R(376-416,424-459;Y456F)

<400>  248

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                   10                  15


Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30


Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45


Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60
```

```
Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val
            100                 105                 110

Ser Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser
        115                 120                 125

Leu Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu
    130                 135                 140

Ser His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser
145                 150                 155                 160

Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe
                165                 170                 175

Gln Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys
            180                 185                 190

Thr Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu Val Leu Ser Glu
        195                 200                 205

Arg Cys Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp
    210                 215                 220

Cys Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu
225                 230                 235                 240

Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Gln Gly Gln Pro Ile
                245                 250                 255

Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser
            260                 265                 270

Ser Phe Phe Gln Asn Gln
        275
```

<210> 249
<211> 251
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)- EpoR(237-338;L241G,L242P)-IL2Rb(393-433)

<400> 249

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1   5   10   15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20   25   30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35   40   45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50   55   60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65   70   75   80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85   90   95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val
            100   105   110

Ser Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser
        115   120   125

Leu Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu
    130   135   140

Ser His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser
145   150   155   160

Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe
                165   170   175

```
Gln Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys
            180                 185                 190


Thr Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu Val Leu Ser Glu
        195                 200                 205


Arg Cys Asp Glu Gly Val Ala Gly Ala Pro Thr Gly Ser Ser Pro Gln
    210                 215                 220


Pro Leu Gln Pro Leu Ser Gly Glu Asp Asp Ala Tyr Cys Thr Phe Pro
225                 230                 235                 240


Ser Arg Asp Asp Leu Leu Leu Phe Ser Pro Ser
                245                 250


<210>  250
<211>  244
<212>  PRT
<213>  Artificial Sequence

<220
<223>  FKBP(F36V)- EpoR(237-338;L241G,L242P)-IL2Rb(518-551)

<400>  250

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                   10                  15


Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30


Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45


Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60


Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80


Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95
```

```
Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val
            100                 105                 110

Ser Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser
        115                 120                 125

Leu Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu
    130                 135                 140

Ser His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser
145                 150                 155                 160

Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe
                165                 170                 175

Gln Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys
            180                 185                 190

Thr Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu Val Leu Ser Glu
        195                 200                 205

Arg Cys Gly Gln Gly Glu Phe Arg Ala Leu Asn Ala Arg Leu Pro Leu
    210                 215                 220

Asn Thr Asp Ala Tyr Leu Ser Leu Gln Glu Leu Gln Gly Gln Asp Pro
225                 230                 235                 240

Thr His Leu Val
```

<210> 251
<211> 292
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)- EpoR(237-338;L241G,L242P)-IL2Rb(339-379,393-433)

<400> 251

```
Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                   10                  15
```

```
Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val
            100                 105                 110

Ser Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser
        115                 120                 125

Leu Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu
    130                 135                 140

Ser His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser
145                 150                 155                 160

Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe
                165                 170                 175

Gln Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys
            180                 185                 190

Thr Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu Val Leu Ser Glu
        195                 200                 205

Arg Cys Gln Gln Asp Lys Val Pro Glu Pro Ala Ser Leu Ser Ser Asn
    210                 215                 220
```

```
His Ser Leu Thr Ser Cys Phe Thr Asn Gln Gly Tyr Phe Phe Phe His
225                 230                 235                 240


Leu Pro Asp Ala Leu Glu Ile Glu Ala Cys Gln Asp Glu Gly Val Ala
                245                 250                 255


Gly Ala Pro Thr Gly Ser Ser Pro Gln Pro Leu Gln Pro Leu Ser Gly
            260                 265                 270


Glu Asp Asp Ala Tyr Cys Thr Phe Pro Ser Arg Asp Asp Leu Leu Leu
        275                 280                 285


Phe Ser Pro Ser
    290


<210>  252
<211>  285
<212>  PRT
<213>  Artificial Sequence

<220
<223>  FKBP(F36V)- EpoR(237-338;L241G,L242P)-IL2Rb(339-379,518-551)

<400>  252

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                   10                  15


Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30


Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45


Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60


Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80


Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95
```

```
Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val
            100                 105                 110

Ser Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser
        115                 120                 125

Leu Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu
    130                 135                 140

Ser His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser
145                 150                 155                 160

Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe
                165                 170                 175

Gln Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys
            180                 185                 190

Thr Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu Val Leu Ser Glu
        195                 200                 205

Arg Cys Gln Gln Asp Lys Val Pro Glu Pro Ala Ser Leu Ser Ser Asn
    210                 215                 220

His Ser Leu Thr Ser Cys Phe Thr Asn Gln Gly Tyr Phe Phe Phe His
225                 230                 235                 240

Leu Pro Asp Ala Leu Glu Ile Glu Ala Cys Gln Gly Gln Gly Glu Phe
                245                 250                 255

Arg Ala Leu Asn Ala Arg Leu Pro Leu Asn Thr Asp Ala Tyr Leu Ser
            260                 265                 270

Leu Gln Glu Leu Gln Gly Gln Asp Pro Thr His Leu Val
        275                 280                 285
```

<210> 253
<211> 285
<212> PRT
<213> Artificial Sequence

<220

<223> FKBP(F36V)- EpoR(237-338;L241G,L242P)-IL2Rb(393-433,518-551)

<400> 253

```
Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                  10                  15


Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30


Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45


Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60


Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80


Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95


Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val
            100                 105                 110


Ser Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser
        115                 120                 125


Leu Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu
    130                 135                 140


Ser His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser
145                 150                 155                 160


Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe
                165                 170                 175


Gln Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys
            180                 185                 190


Thr Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu Val Leu Ser Glu
        195                 200                 205
```

Arg Cys Asp Glu Gly Val Ala Gly Ala Pro Thr Gly Ser Ser Pro Gln
210 215 220

Pro Leu Gln Pro Leu Ser Gly Glu Asp Asp Ala Tyr Cys Thr Phe Pro
225 230 235 240

Ser Arg Asp Asp Leu Leu Leu Phe Ser Pro Ser Gly Gln Gly Glu Phe
245 250 255

Arg Ala Leu Asn Ala Arg Leu Pro Leu Asn Thr Asp Ala Tyr Leu Ser
260 265 270

Leu Gln Glu Leu Gln Gly Gln Asp Pro Thr His Leu Val
275 280 285

<210> 254
<211> 326
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)- EpoR(237-338;L241G,L242P)-IL2Rb(339-379,393-433,518-551)

<400> 254

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1 5 10 15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
20 25 30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
35 40 45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
50 55 60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65 70 75 80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
85 90 95

```
Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val
            100                 105                 110

Ser Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser
        115                 120                 125

Leu Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu
    130                 135                 140

Ser His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser
145                 150                 155                 160

Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe
                165                 170                 175

Gln Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys
            180                 185                 190

Thr Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu Val Leu Ser Glu
        195                 200                 205

Arg Cys Gln Gln Asp Lys Val Pro Glu Pro Ala Ser Leu Ser Ser Asn
    210                 215                 220

His Ser Leu Thr Ser Cys Phe Thr Asn Gln Gly Tyr Phe Phe Phe His
225                 230                 235                 240

Leu Pro Asp Ala Leu Glu Ile Glu Ala Cys Gln Asp Glu Gly Val Ala
                245                 250                 255

Gly Ala Pro Thr Gly Ser Ser Pro Gln Pro Leu Gln Pro Leu Ser Gly
            260                 265                 270

Glu Asp Asp Ala Tyr Cys Thr Phe Pro Ser Arg Asp Asp Leu Leu Leu
        275                 280                 285

Phe Ser Pro Ser Gly Gln Gly Glu Phe Arg Ala Leu Asn Ala Arg Leu
    290                 295                 300
```

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

Asp Pro Thr His Leu Val
325

<210> 255
<211> 441
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)- EpoR(237-338;L241G,L242P)-EGFR(955-1186)

<400> 255

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1 5 10 15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
20 25 30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
35 40 45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
50 55 60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65 70 75 80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
85 90 95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val
100 105 110

Ser Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser
115 120 125

Leu Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu
130 135 140

```
Ser His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser
145                 150                 155                 160

Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe
                165                 170                 175

Gln Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys
            180                 185                 190

Thr Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu Val Leu Ser Glu
        195                 200                 205

Arg Cys Val Ile Gln Gly Asp Glu Arg Met His Leu Pro Ser Pro Thr
    210                 215                 220

Asp Ser Asn Phe Tyr Arg Ala Leu Met Asp Glu Glu Asp Met Asp Asp
225                 230                 235                 240

Val Val Asp Ala Asp Glu Tyr Leu Ile Pro Gln Gln Gly Phe Phe Ser
                245                 250                 255

Ser Pro Ser Thr Ser Arg Thr Pro Leu Leu Ser Ser Leu Ser Ala Thr
            260                 265                 270

Ser Asn Asn Ser Thr Val Ala Cys Ile Asp Arg Asn Gly Leu Gln Ser
        275                 280                 285

Cys Pro Ile Lys Glu Asp Ser Phe Leu Gln Arg Tyr Ser Ser Asp Pro
    290                 295                 300

Thr Gly Ala Leu Thr Glu Asp Ser Ile Asp Asp Thr Phe Leu Pro Val
305                 310                 315                 320

Pro Glu Tyr Ile Asn Gln Ser Val Pro Lys Arg Pro Ala Gly Ser Val
                325                 330                 335

Gln Asn Pro Val Tyr His Asn Gln Pro Leu Asn Pro Ala Pro Ser Arg
            340                 345                 350

Asp Pro His Tyr Gln Asp Pro His Ser Thr Ala Val Gly Asn Pro Glu
        355                 360                 365
```

Tyr Leu Asn Thr Val Gln Pro Thr Cys Val Asn Ser Thr Phe Asp Ser
370 375 380

Pro Ala His Trp Ala Gln Lys Gly Ser His Gln Ile Ser Leu Asp Asn
385 390 395 400

Pro Asp Tyr Gln Gln Asp Phe Phe Pro Lys Glu Ala Lys Pro Asn Gly
405 410 415

Ile Phe Lys Gly Ser Thr Ala Glu Asn Ala Glu Tyr Leu Arg Val Ala
420 425 430

Pro Gln Ser Ser Glu Phe Ile Gly Ala
435 440

<210> 256
<211> 428
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)- EpoR(237-338;L241G,L242P)-EGFR(955-1044,1058-1186;Y974F)

<400> 256

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1 5 10 15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
20 25 30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
35 40 45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
50 55 60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65 70 75 80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
85 90 95

```
Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val
            100                 105                 110

Ser Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser
        115                 120                 125

Leu Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu
    130                 135                 140

Ser His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser
145                 150                 155                 160

Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe
                165                 170                 175

Gln Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys
            180                 185                 190

Thr Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu Val Leu Ser Glu
        195                 200                 205

Arg Cys Val Ile Gln Gly Asp Glu Arg Met His Leu Pro Ser Pro Thr
    210                 215                 220

Asp Ser Asn Phe Phe Arg Ala Leu Met Asp Glu Glu Asp Met Asp Asp
225                 230                 235                 240

Val Val Asp Ala Asp Glu Tyr Leu Ile Pro Gln Gln Gly Phe Phe Ser
                245                 250                 255

Ser Pro Ser Thr Ser Arg Thr Pro Leu Leu Ser Ser Leu Ser Ala Thr
            260                 265                 270

Ser Asn Asn Ser Thr Val Ala Cys Ile Asp Arg Asn Gly Leu Gln Ser
        275                 280                 285

Cys Pro Ile Lys Glu Asp Ser Phe Leu Gln Arg Ile Asp Asp Thr Phe
    290                 295                 300
```

```
Leu Pro Val Pro Glu Tyr Ile Asn Gln Ser Val Pro Lys Arg Pro Ala
305                 310                 315                 320

Gly Ser Val Gln Asn Pro Val Tyr His Asn Gln Pro Leu Asn Pro Ala
                325                 330                 335

Pro Ser Arg Asp Pro His Tyr Gln Asp Pro His Ser Thr Ala Val Gly
            340                 345                 350

Asn Pro Glu Tyr Leu Asn Thr Val Gln Pro Thr Cys Val Asn Ser Thr
        355                 360                 365

Phe Asp Ser Pro Ala His Trp Ala Gln Lys Gly Ser His Gln Ile Ser
    370                 375                 380

Leu Asp Asn Pro Asp Tyr Gln Gln Asp Phe Phe Pro Lys Glu Ala Lys
385                 390                 395                 400

Pro Asn Gly Ile Phe Lys Gly Ser Thr Ala Glu Asn Ala Glu Tyr Leu
                405                 410                 415

Arg Val Ala Pro Gln Ser Ser Glu Phe Ile Gly Ala
            420                 425


<210>  257
<211>  264
<212>  PRT
<213>  Artificial Sequence

<220
<223>  FKBP(F36V)- EpoR(237-338;L241G,L242P)-EGFR(955-1009;Y974F)

<400>  257

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                   10                  15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45
```

```
Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val
            100                 105                 110

Ser Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser
        115                 120                 125

Leu Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu
    130                 135                 140

Ser His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser
145                 150                 155                 160

Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe
                165                 170                 175

Gln Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys
            180                 185                 190

Thr Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu Val Leu Ser Glu
        195                 200                 205

Arg Cys Val Ile Gln Gly Asp Glu Arg Met His Leu Pro Ser Pro Thr
    210                 215                 220

Asp Ser Asn Phe Phe Arg Ala Leu Met Asp Glu Glu Asp Met Asp Asp
225                 230                 235                 240

Val Val Asp Ala Asp Glu Tyr Leu Ile Pro Gln Gln Gly Phe Phe Ser
                245                 250                 255

Ser Pro Ser Thr Ser Arg Thr Pro
            260
```

<210> 258
<211> 264
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)- EpoR(237-338;L241G,L242P)-EGFR(1019-1085)

<400> 258

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1   5   10   15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20   25   30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35   40   45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50   55   60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65   70   75   80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85   90   95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val
            100   105   110

Ser Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser
        115   120   125

Leu Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu
    130   135   140

Ser His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser
145   150   155   160

Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe
                165   170   175

```
Gln Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys
            180                 185                 190


Thr Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu Val Leu Ser Glu
        195                 200                 205


Arg Cys Asn Asn Ser Thr Val Ala Cys Ile Asp Arg Asn Gly Leu Gln
    210                 215                 220


Ser Cys Pro Ile Lys Glu Asp Ser Phe Leu Gln Arg Ile Asp Asp Thr
225                 230                 235                 240


Phe Leu Pro Val Pro Glu Tyr Ile Asn Gln Ser Val Pro Lys Arg Pro
                245                 250                 255


Ala Gly Ser Val Gln Asn Pro Val
            260


<210>  259
<211>  264
<212>  PRT
<213>  Artificial Sequence

<220
<223>  FKBP(F36V)-
EpoR(237-338;L241G,L242P)-EGFR(1037-1044,1058-1103;Y1068/1101F)

<400>  259

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                   10                  15


Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30


Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45


Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60


Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
```

```
65                  70                  75                  80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val
            100                 105                 110

Ser Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser
        115                 120                 125

Leu Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu
    130                 135                 140

Ser His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser
145                 150                 155                 160

Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe
                165                 170                 175

Gln Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys
            180                 185                 190

Thr Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu Val Leu Ser Glu
        195                 200                 205

Arg Cys Lys Glu Asp Ser Phe Leu Gln Arg Ile Asp Asp Thr Phe Leu
    210                 215                 220

Pro Val Pro Glu Phe Ile Asn Gln Ser Val Pro Lys Arg Pro Ala Gly
225                 230                 235                 240

Ser Val Gln Asn Pro Val Tyr His Asn Gln Pro Leu Asn Pro Ala Pro
                245                 250                 255

Ser Arg Asp Pro His Phe Gln Asp
            260
```

<210> 260
<211> 264
<212> PRT

<213> Artificial Sequence

<220
<223> FKBP(F36V)- EpoR(237-338;L241G,L242P)-EGFR(1066-1118;Y1068/1086F)

<400> 260

```
Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                   10                  15


Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30


Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45


Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60


Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80


Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95


Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val
            100                 105                 110


Ser Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser
        115                 120                 125


Leu Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu
    130                 135                 140


Ser His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser
145                 150                 155                 160


Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe
                165                 170                 175


Gln Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys
            180                 185                 190
```

```
Thr Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu Val Leu Ser Glu
        195                 200                 205

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

Gly Ser Val Gln Asn Pro Val Phe His Asn Gln Pro Leu Asn Pro Ala
225                 230                 235                 240

Pro Ser Arg Asp Pro His Tyr Gln Asp Pro His Ser Thr Ala Val Gly
                245                 250                 255

Asn Pro Glu Tyr Leu Asn Thr Val
            260
```

<210> 261
<211> 264
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)- EpoR(237-338;L241G,L242P)-EGFR(1122-1165)

<400> 261

```
Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                   10                  15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95
```

```
Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val
            100                 105                 110

Ser Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser
        115                 120                 125

Leu Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu
    130                 135                 140

Ser His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser
145                 150                 155                 160

Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe
                165                 170                 175

Gln Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys
            180                 185                 190

Thr Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu Val Leu Ser Glu
        195                 200                 205

Arg Cys Pro Glu Tyr Leu Asn Thr Val Gln Pro Thr Cys Val Asn Ser
    210                 215                 220

Thr Phe Asp Ser Pro Ala His Trp Ala Gln Lys Gly Ser His Gln Ile
225                 230                 235                 240

Ser Leu Asp Asn Pro Asp Tyr Gln Gln Asp Phe Phe Pro Lys Glu Ala
                245                 250                 255

Lys Pro Asn Gly Ile Phe Lys Gly
            260
```

<210> 262
<211> 264
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)- EpoR(237-338;L241G,L242P)-EGFR(1133-1186;Y1148F)

<400> 262

```
Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                  10                  15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val
            100                 105                 110

Ser Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser
        115                 120                 125

Leu Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu
    130                 135                 140

Ser His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser
145                 150                 155                 160

Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe
                165                 170                 175

Gln Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys
            180                 185                 190

Thr Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu Val Leu Ser Glu
        195                 200                 205

Arg Cys Trp Ala Gln Lys Gly Ser His Gln Ile Ser Leu Asp Asn Pro
```

210 215 220

Asp Phe Gln Gln Asp Phe Phe Pro Lys Glu Ala Lys Pro Asn Gly Ile
225 230 235 240

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

Gln Ser Ser Glu Phe Ile Gly Ala
260

<210> 263
<211> 366
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)- EpoR(237-338;L241G,L242P)-BLNK(53-208)

<400> 263

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1 5 10 15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
20 25 30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
35 40 45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
50 55 60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65 70 75 80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
85 90 95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val
100 105 110

Ser Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser

```
        115                 120                 125

Leu Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu
    130                 135                 140

Ser His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser
145                 150                 155                 160

Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe
                165                 170                 175

Gln Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys
            180                 185                 190

Thr Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu Val Leu Ser Glu
        195                 200                 205

Arg Cys Ala Ser Glu Ser Pro Ala Asp Glu Glu Glu Gln Trp Ser Asp
    210                 215                 220

Asp Phe Asp Ser Asp Tyr Glu Asn Pro Asp Glu His Ser Asp Ser Glu
225                 230                 235                 240

Met Tyr Val Met Pro Ala Glu Glu Asn Ala Asp Asp Ser Tyr Glu Pro
                245                 250                 255

Pro Pro Val Glu Gln Glu Thr Arg Pro Val His Pro Ala Leu Pro Phe
            260                 265                 270

Ala Arg Gly Glu Tyr Ile Asp Asn Arg Ser Ser Gln Arg His Ser Pro
        275                 280                 285

Pro Phe Ser Lys Thr Leu Pro Ser Lys Pro Ser Trp Pro Ser Glu Lys
    290                 295                 300

Ala Arg Leu Thr Ser Thr Leu Pro Ala Leu Thr Ala Leu Gln Lys Pro
305                 310                 315                 320

Gln Val Pro Pro Lys Pro Lys Gly Leu Leu Glu Asp Glu Ala Asp Tyr
                325                 330                 335
```

Val Val Pro Val Glu Asp Asn Asp Glu Asn Tyr Ile His Pro Thr Glu
340 345 350

Ser Ser Ser Pro Pro Pro Glu Lys Ala Pro Met Val Asn Arg
355 360 365

<210> 264
<211> 366
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)- EpoR(237-338;L241G,L242P)-BLNK(53-208;Y72F)

<400> 264

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1 5 10 15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
20 25 30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
35 40 45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
50 55 60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65 70 75 80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
85 90 95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val
100 105 110

Ser Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser
115 120 125

Leu Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu
130 135 140

```
Ser His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser
145                 150                 155                 160

Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe
                165                 170                 175

Gln Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys
            180                 185                 190

Thr Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu Val Leu Ser Glu
        195                 200                 205

Arg Cys Ala Ser Glu Ser Pro Ala Asp Glu Glu Glu Gln Trp Ser Asp
    210                 215                 220

Asp Phe Asp Ser Asp Phe Glu Asn Pro Asp Glu His Ser Asp Ser Glu
225                 230                 235                 240

Met Tyr Val Met Pro Ala Glu Glu Asn Ala Asp Asp Ser Tyr Glu Pro
                245                 250                 255

Pro Pro Val Glu Gln Glu Thr Arg Pro Val His Pro Ala Leu Pro Phe
            260                 265                 270

Ala Arg Gly Glu Tyr Ile Asp Asn Arg Ser Ser Gln Arg His Ser Pro
        275                 280                 285

Pro Phe Ser Lys Thr Leu Pro Ser Lys Pro Ser Trp Pro Ser Glu Lys
    290                 295                 300

Ala Arg Leu Thr Ser Thr Leu Pro Ala Leu Thr Ala Leu Gln Lys Pro
305                 310                 315                 320

Gln Val Pro Pro Lys Pro Lys Gly Leu Leu Glu Asp Glu Ala Asp Tyr
                325                 330                 335

Val Val Pro Val Glu Asp Asn Asp Glu Asn Tyr Ile His Pro Thr Glu
            340                 345                 350

Ser Ser Ser Pro Pro Pro Glu Lys Ala Pro Met Val Asn Arg
```

355 360 365

<210> 265
<211> 366
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)- EpoR(237-338;L241G,L242P)-BLNK(53-208;Y72F,Y96F)

<400> 265

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1 5 10 15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
20 25 30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
35 40 45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
50 55 60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65 70 75 80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
85 90 95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Glu Pro Val
100 105 110

Ser Gly Pro Thr Pro Ser Asp Leu Asp Pro Leu Ile Leu Thr Leu Ser
115 120 125

Leu Ile Leu Val Val Ile Leu Val Gly Pro Thr Val Leu Ala Leu Leu
130 135 140

Ser His Arg Arg Ala Leu Lys Gln Lys Ile Trp Pro Gly Ile Pro Ser
145 150 155 160

Pro Glu Ser Glu Phe Glu Gly Leu Phe Thr Thr His Lys Gly Asn Phe

```
                165                 170                 175

Gln Leu Trp Leu Tyr Gln Asn Asp Gly Cys Leu Trp Trp Ser Pro Cys
            180                 185                 190

Thr Pro Phe Thr Glu Asp Pro Pro Ala Ser Leu Glu Val Leu Ser Glu
        195                 200                 205

Arg Cys Ala Ser Glu Ser Pro Ala Asp Glu Glu Glu Gln Trp Ser Asp
    210                 215                 220

Asp Phe Asp Ser Asp Phe Glu Asn Pro Asp Glu His Ser Asp Ser Glu
225                 230                 235                 240

Met Tyr Val Met Pro Ala Glu Glu Asn Ala Asp Asp Ser Phe Glu Pro
                245                 250                 255

Pro Pro Val Glu Gln Glu Thr Arg Pro Val His Pro Ala Leu Pro Phe
            260                 265                 270

Ala Arg Gly Glu Tyr Ile Asp Asn Arg Ser Ser Gln Arg His Ser Pro
        275                 280                 285

Pro Phe Ser Lys Thr Leu Pro Ser Lys Pro Ser Trp Pro Ser Glu Lys
    290                 295                 300

Ala Arg Leu Thr Ser Thr Leu Pro Ala Leu Thr Ala Leu Gln Lys Pro
305                 310                 315                 320

Gln Val Pro Pro Lys Pro Lys Gly Leu Leu Glu Asp Glu Ala Asp Tyr
                325                 330                 335

Val Val Pro Val Glu Asp Asn Asp Glu Asn Tyr Ile His Pro Thr Glu
            340                 345                 350

Ser Ser Ser Pro Pro Pro Glu Lys Ala Pro Met Val Asn Arg
        355                 360                 365

<210>  266
<211>  357
<212>  PRT
```

<213> Artificial Sequence

<220
<223> FKBP(F36V)- TPOR/MPLR(478-582)-IL7R(316-459)

<400> 266

```
Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                  10                  15


Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30


Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45


Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60


Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80


Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95


Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
            100                 105                 110


Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile Ser Leu Val Thr Ala
        115                 120                 125


Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu
    130                 135                 140


Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp
145                 150                 155                 160


Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp
                165                 170                 175


Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys Glu
            180                 185                 190
```

```
Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg
        195                 200                 205

Thr Pro Leu Pro Leu Ala Arg Asp Glu Val Glu Gly Phe Leu Gln Asp
    210                 215                 220

Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly
225                 230                 235                 240

Asp Val Gln Ser Pro Asn Cys Pro Ser Glu Asp Val Val Ile Thr Pro
                245                 250                 255

Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn Val
            260                 265                 270

Ser Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys
        275                 280                 285

Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu
    290                 295                 300

Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln
305                 310                 315                 320

Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu
                325                 330                 335

Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser
            340                 345                 350

Phe Tyr Gln Asn Gln
        355
```

<210> 267
<211> 432
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)- TPOR/MPLR(478-582)-IL2Rb(333-551)

<400> 267

```
Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                  10                  15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
            100                 105                 110

Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile Ser Leu Val Thr Ala
        115                 120                 125

Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu
    130                 135                 140

Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp
145                 150                 155                 160

Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp
                165                 170                 175

Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys Glu
            180                 185                 190

Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg
        195                 200                 205

Thr Pro Leu Pro Leu Val Thr Gln Leu Leu Leu Gln Gln Asp Lys Val
```

```
    210                 215                 220

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

Thr Asn Gln Gly Tyr Phe Phe Phe His Leu Pro Asp Ala Leu Glu Ile
                245                 250                 255

Glu Ala Cys Gln Val Tyr Phe Thr Tyr Asp Pro Tyr Ser Glu Glu Asp
            260                 265                 270

Pro Asp Glu Gly Val Ala Gly Ala Pro Thr Gly Ser Ser Pro Gln Pro
        275                 280                 285

Leu Gln Pro Leu Ser Gly Glu Asp Asp Ala Tyr Cys Thr Phe Pro Ser
    290                 295                 300

Arg Asp Asp Leu Leu Leu Phe Ser Pro Ser Leu Leu Gly Gly Pro Ser
305                 310                 315                 320

Pro Pro Ser Thr Ala Pro Gly Gly Ser Gly Ala Gly Glu Glu Arg Met
                325                 330                 335

Pro Pro Ser Leu Gln Glu Arg Val Pro Arg Asp Trp Asp Pro Gln Pro
            340                 345                 350

Leu Gly Pro Pro Thr Pro Gly Val Pro Asp Leu Val Asp Phe Gln Pro
        355                 360                 365

Pro Pro Glu Leu Val Leu Arg Glu Ala Gly Glu Glu Val Pro Asp Ala
    370                 375                 380

Gly Pro Arg Glu Gly Val Ser Phe Pro Trp Ser Arg Pro Pro Gly Gln
385                 390                 395                 400

Gly Glu Phe Arg Ala Leu Asn Ala Arg Leu Pro Leu Asn Thr Asp Ala
                405                 410                 415

Tyr Leu Ser Leu Gln Glu Leu Gln Gly Gln Asp Pro Thr His Leu Val
            420                 425                 430
```

<210> 268
<211> 288
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)- TPOR/MPLR(478-582)-IL2Rbsmall(393-433,518-551)

<400> 268

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1   5   10   15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20   25   30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35   40   45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50   55   60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65   70   75   80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85   90   95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
            100   105   110

Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile Ser Leu Val Thr Ala
        115   120   125

Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu
    130   135   140

Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp
145   150   155   160

Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp
                165   170   175

```
Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys Glu
            180                 185                 190


Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg
        195                 200                 205


Thr Pro Leu Pro Leu Asp Glu Gly Val Ala Gly Ala Pro Thr Gly Ser
    210                 215                 220


Ser Pro Gln Pro Leu Gln Pro Leu Ser Gly Glu Asp Asp Ala Tyr Cys
225                 230                 235                 240


Thr Phe Pro Ser Arg Asp Asp Leu Leu Leu Phe Ser Pro Ser Gly Gln
                245                 250                 255


Gly Glu Phe Arg Ala Leu Asn Ala Arg Leu Pro Leu Asn Thr Asp Ala
            260                 265                 270


Tyr Leu Ser Leu Gln Glu Leu Gln Gly Gln Asp Pro Thr His Leu Val
        275                 280                 285


<210>  269
<211>  329
<212>  PRT
<213>  Artificial Sequence

<220
<223>  FKBP(F36V)- TPOR/MPLR(478-582)-IL2Rbsmall(339-379,393-433,518-551)

<400>  269

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                   10                  15


Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30


Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45


Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60
```

```
Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
            100                 105                 110

Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile Ser Leu Val Thr Ala
        115                 120                 125

Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu
    130                 135                 140

Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp
145                 150                 155                 160

Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp
                165                 170                 175

Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys Glu
            180                 185                 190

Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg
        195                 200                 205

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

Ser Ser Asn His Ser Leu Thr Ser Cys Phe Thr Asn Gln Gly Tyr Phe
225                 230                 235                 240

Phe Phe His Leu Pro Asp Ala Leu Glu Ile Glu Ala Cys Gln Asp Glu
                245                 250                 255

Gly Val Ala Gly Ala Pro Thr Gly Ser Ser Pro Gln Pro Leu Gln Pro
            260                 265                 270

Leu Ser Gly Glu Asp Asp Ala Tyr Cys Thr Phe Pro Ser Arg Asp Asp
```

275 280 285

Leu Leu Leu Phe Ser Pro Ser Gly Gln Gly Glu Phe Arg Ala Leu Asn
290 295 300

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

Gln Gly Gln Asp Pro Thr His Leu Val
325

<210> 270
<211> 408
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)- TPOR/MPLR(478-582)-IL7R(316-459)-IL12Rb2(775-825)

<400> 270

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1 5 10 15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
20 25 30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
35 40 45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
50 55 60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65 70 75 80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
85 90 95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
100 105 110

Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile Ser Leu Val Thr Ala

```
        115                 120                 125

Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu
    130                 135                 140

Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp
145                 150                 155                 160

Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp
                165                 170                 175

Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys Glu
            180                 185                 190

Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg
        195                 200                 205

Thr Pro Leu Pro Leu Ala Arg Asp Glu Val Glu Gly Phe Leu Gln Asp
    210                 215                 220

Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly
225                 230                 235                 240

Asp Val Gln Ser Pro Asn Cys Pro Ser Glu Asp Val Val Ile Thr Pro
                245                 250                 255

Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn Val
            260                 265                 270

Ser Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys
        275                 280                 285

Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu
    290                 295                 300

Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln
305                 310                 315                 320

Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu
                325                 330                 335
```

```
Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser
            340                 345                 350


Phe Tyr Gln Asn Gln Ser Asp Pro Lys Pro Glu Asn Pro Ala Cys Pro
        355                 360                 365


Trp Thr Val Leu Pro Ala Gly Asp Leu Pro Thr His Asp Gly Tyr Leu
    370                 375                 380


Pro Ser Asn Ile Asp Asp Leu Pro Ser His Glu Ala Pro Leu Ala Asp
385                 390                 395                 400


Ser Leu Glu Glu Leu Glu Pro Gln
                405
```

<210> 271
<211> 574
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)- TPOR/MPLR(478-582)-IL7R(316-459)-IL21R(322-538)

<400> 271

```
Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                   10                  15


Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30


Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45


Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60


Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80


Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95
```

```
Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
            100                 105                 110

Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile Ser Leu Val Thr Ala
        115                 120                 125

Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu
    130                 135                 140

Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp
145                 150                 155                 160

Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp
                165                 170                 175

Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys Glu
            180                 185                 190

Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg
        195                 200                 205

Thr Pro Leu Pro Leu Ala Arg Asp Glu Val Glu Gly Phe Leu Gln Asp
    210                 215                 220

Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly
225                 230                 235                 240

Asp Val Gln Ser Pro Asn Cys Pro Ser Glu Asp Val Val Ile Thr Pro
                245                 250                 255

Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn Val
            260                 265                 270

Ser Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys
        275                 280                 285

Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu
    290                 295                 300

Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln
```

```
305                 310                 315                 320

Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu
                325                 330                 335

Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser
            340                 345                 350

Phe Tyr Gln Asn Gln Pro Arg Ser Pro Ala Lys Arg Leu Gln Leu Thr
        355                 360                 365

Glu Leu Gln Glu Pro Ala Glu Leu Val Glu Ser Asp Gly Val Pro Lys
    370                 375                 380

Pro Ser Phe Trp Pro Thr Ala Gln Asn Ser Gly Gly Ser Ala Tyr Ser
385                 390                 395                 400

Glu Glu Arg Asp Arg Pro Tyr Gly Leu Val Ser Ile Asp Thr Val Thr
                405                 410                 415

Val Leu Asp Ala Glu Gly Pro Cys Thr Trp Pro Cys Ser Cys Glu Asp
            420                 425                 430

Asp Gly Tyr Pro Ala Leu Asp Leu Asp Ala Gly Leu Glu Pro Ser Pro
        435                 440                 445

Gly Leu Glu Asp Pro Leu Leu Asp Ala Gly Thr Thr Val Leu Ser Cys
    450                 455                 460

Gly Cys Val Ser Ala Gly Ser Pro Gly Leu Gly Gly Pro Leu Gly Ser
465                 470                 475                 480

Leu Leu Asp Arg Leu Lys Pro Pro Leu Ala Asp Gly Glu Asp Trp Ala
                485                 490                 495

Gly Gly Leu Pro Trp Gly Gly Arg Ser Pro Gly Gly Val Ser Glu Ser
            500                 505                 510

Glu Ala Gly Ser Pro Leu Ala Gly Leu Asp Met Asp Thr Phe Asp Ser
        515                 520                 525
```

Gly Phe Val Gly Ser Asp Cys Ser Ser Pro Val Glu Cys Asp Phe Thr
530 535 540

Ser Pro Gly Asp Glu Gly Pro Pro Arg Ser Tyr Leu Arg Gln Trp Val
545 550 555 560

Val Ile Pro Pro Pro Leu Ser Ser Pro Gly Pro Gln Ala Ser
565 570

<210> 272
<211> 574
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)- TPOR/MPLR(478-582)- IL21R(322-538)-IL7R(316-459)

<400> 272

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1 5 10 15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
20 25 30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
35 40 45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
50 55 60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65 70 75 80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
85 90 95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
100 105 110

Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile Ser Leu Val Thr Ala
115 120 125

```
Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu
    130                 135                 140

Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp
145                 150                 155                 160

Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp
                165                 170                 175

Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys Glu
            180                 185                 190

Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg
        195                 200                 205

Thr Pro Leu Pro Leu Pro Arg Ser Pro Ala Lys Arg Leu Gln Leu Thr
    210                 215                 220

Glu Leu Gln Glu Pro Ala Glu Leu Val Glu Ser Asp Gly Val Pro Lys
225                 230                 235                 240

Pro Ser Phe Trp Pro Thr Ala Gln Asn Ser Gly Gly Ser Ala Tyr Ser
                245                 250                 255

Glu Glu Arg Asp Arg Pro Tyr Gly Leu Val Ser Ile Asp Thr Val Thr
            260                 265                 270

Val Leu Asp Ala Glu Gly Pro Cys Thr Trp Pro Cys Ser Cys Glu Asp
        275                 280                 285

Asp Gly Tyr Pro Ala Leu Asp Leu Asp Ala Gly Leu Glu Pro Ser Pro
    290                 295                 300

Gly Leu Glu Asp Pro Leu Leu Asp Ala Gly Thr Thr Val Leu Ser Cys
305                 310                 315                 320

Gly Cys Val Ser Ala Gly Ser Pro Gly Leu Gly Gly Pro Leu Gly Ser
                325                 330                 335

Leu Leu Asp Arg Leu Lys Pro Pro Leu Ala Asp Gly Glu Asp Trp Ala
```

```
            340                 345                 350

Gly Gly Leu Pro Trp Gly Gly Arg Ser Pro Gly Gly Val Ser Glu Ser
        355                 360                 365

Glu Ala Gly Ser Pro Leu Ala Gly Leu Asp Met Asp Thr Phe Asp Ser
    370                 375                 380

Gly Phe Val Gly Ser Asp Cys Ser Ser Pro Val Glu Cys Asp Phe Thr
385                 390                 395                 400

Ser Pro Gly Asp Glu Gly Pro Pro Arg Ser Tyr Leu Arg Gln Trp Val
                405                 410                 415

Val Ile Pro Pro Pro Leu Ser Ser Pro Gly Pro Gln Ala Ser Ala Arg
            420                 425                 430

Asp Glu Val Glu Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu
        435                 440                 445

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

Pro Ser Glu Asp Val Val Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser
465                 470                 475                 480

Ser Leu Thr Cys Leu Ala Gly Asn Val Ser Ala Cys Asp Ala Pro Ile
                485                 490                 495

Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg Glu Ser Gly Lys Asn Gly
            500                 505                 510

Pro His Val Tyr Gln Asp Leu Leu Leu Ser Leu Gly Thr Thr Asn Ser
        515                 520                 525

Thr Leu Pro Pro Pro Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn
    530                 535                 540

Pro Val Ala Gln Gly Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln
545                 550                 555                 560
```

Glu Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln Asn Gln
565 570

<210> 273
<211> 505
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)- TPOR/MPLR(478-582)-IL2Rbsmall(393-433,518-551)-IL21R(322-538)

<400> 273

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1 5 10 15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
20 25 30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
35 40 45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
50 55 60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65 70 75 80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
85 90 95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
100 105 110

Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile Ser Leu Val Thr Ala
115 120 125

Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu
130 135 140

Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp
145 150 155 160

```
Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp
                165                 170                 175

Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys Glu
            180                 185                 190

Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg
        195                 200                 205

Thr Pro Leu Pro Leu Asp Glu Gly Val Ala Gly Ala Pro Thr Gly Ser
    210                 215                 220

Ser Pro Gln Pro Leu Gln Pro Leu Ser Gly Glu Asp Asp Ala Tyr Cys
225                 230                 235                 240

Thr Phe Pro Ser Arg Asp Asp Leu Leu Leu Phe Ser Pro Ser Gly Gln
                245                 250                 255

Gly Glu Phe Arg Ala Leu Asn Ala Arg Leu Pro Leu Asn Thr Asp Ala
            260                 265                 270

Tyr Leu Ser Leu Gln Glu Leu Gln Gly Gln Asp Pro Thr His Leu Val
        275                 280                 285

Pro Arg Ser Pro Ala Lys Arg Leu Gln Leu Thr Glu Leu Gln Glu Pro
    290                 295                 300

Ala Glu Leu Val Glu Ser Asp Gly Val Pro Lys Pro Ser Phe Trp Pro
305                 310                 315                 320

Thr Ala Gln Asn Ser Gly Gly Ser Ala Tyr Ser Glu Glu Arg Asp Arg
                325                 330                 335

Pro Tyr Gly Leu Val Ser Ile Asp Thr Val Thr Val Leu Asp Ala Glu
            340                 345                 350

Gly Pro Cys Thr Trp Pro Cys Ser Cys Glu Asp Asp Gly Tyr Pro Ala
        355                 360                 365

Leu Asp Leu Asp Ala Gly Leu Glu Pro Ser Pro Gly Leu Glu Asp Pro
```

```
    370                 375                 380

Leu Leu Asp Ala Gly Thr Thr Val Leu Ser Cys Gly Cys Val Ser Ala
385                 390                 395                 400

Gly Ser Pro Gly Leu Gly Gly Pro Leu Gly Ser Leu Leu Asp Arg Leu
                405                 410                 415

Lys Pro Pro Leu Ala Asp Gly Glu Asp Trp Ala Gly Gly Leu Pro Trp
            420                 425                 430

Gly Gly Arg Ser Pro Gly Gly Val Ser Glu Ser Glu Ala Gly Ser Pro
        435                 440                 445

Leu Ala Gly Leu Asp Met Asp Thr Phe Asp Ser Gly Phe Val Gly Ser
    450                 455                 460

Asp Cys Ser Ser Pro Val Glu Cys Asp Phe Thr Ser Pro Gly Asp Glu
465                 470                 475                 480

Gly Pro Pro Arg Ser Tyr Leu Arg Gln Trp Val Val Ile Pro Pro Pro
                485                 490                 495

Leu Ser Ser Pro Gly Pro Gln Ala Ser
            500                 505


<210>  274
<211>  505
<212>  PRT
<213>  Artificial Sequence

<220
<223>  FKBP(F36V)- TPOR/MPLR(478-582)-
IL21R(322-538)-IL2Rbsmall(393-433,518-551)

<400>  274

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                   10                  15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30
```

```
Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
            100                 105                 110

Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile Ser Leu Val Thr Ala
        115                 120                 125

Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu
    130                 135                 140

Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp
145                 150                 155                 160

Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp
                165                 170                 175

Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys Glu
            180                 185                 190

Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg
        195                 200                 205

Thr Pro Leu Pro Leu Pro Arg Ser Pro Ala Lys Arg Leu Gln Leu Thr
    210                 215                 220

Glu Leu Gln Glu Pro Ala Glu Leu Val Glu Ser Asp Gly Val Pro Lys
225                 230                 235                 240

Pro Ser Phe Trp Pro Thr Ala Gln Asn Ser Gly Gly Ser Ala Tyr Ser
                245                 250                 255
```

```
Glu Glu Arg Asp Arg Pro Tyr Gly Leu Val Ser Ile Asp Thr Val Thr
            260                 265                 270

Val Leu Asp Ala Glu Gly Pro Cys Thr Trp Pro Cys Ser Cys Glu Asp
        275                 280                 285

Asp Gly Tyr Pro Ala Leu Asp Leu Asp Ala Gly Leu Glu Pro Ser Pro
    290                 295                 300

Gly Leu Glu Asp Pro Leu Leu Asp Ala Gly Thr Thr Val Leu Ser Cys
305                 310                 315                 320

Gly Cys Val Ser Ala Gly Ser Pro Gly Leu Gly Gly Pro Leu Gly Ser
                325                 330                 335

Leu Leu Asp Arg Leu Lys Pro Pro Leu Ala Asp Gly Glu Asp Trp Ala
            340                 345                 350

Gly Gly Leu Pro Trp Gly Gly Arg Ser Pro Gly Gly Val Ser Glu Ser
        355                 360                 365

Glu Ala Gly Ser Pro Leu Ala Gly Leu Asp Met Asp Thr Phe Asp Ser
    370                 375                 380

Gly Phe Val Gly Ser Asp Cys Ser Ser Pro Val Glu Cys Asp Phe Thr
385                 390                 395                 400

Ser Pro Gly Asp Glu Gly Pro Pro Arg Ser Tyr Leu Arg Gln Trp Val
                405                 410                 415

Val Ile Pro Pro Pro Leu Ser Ser Pro Gly Pro Gln Ala Ser Asp Glu
            420                 425                 430

Gly Val Ala Gly Ala Pro Thr Gly Ser Ser Pro Gln Pro Leu Gln Pro
        435                 440                 445

Leu Ser Gly Glu Asp Asp Ala Tyr Cys Thr Phe Pro Ser Arg Asp Asp
    450                 455                 460
```

```
Leu Leu Leu Phe Ser Pro Ser Gly Gln Gly Glu Phe Arg Ala Leu Asn
465                 470                 475                 480


Ala Arg Leu Pro Leu Asn Thr Asp Ala Tyr Leu Ser Leu Gln Glu Leu
                485                 490                 495


Gln Gly Gln Asp Pro Thr His Leu Val
            500                 505


<210>  275
<211>  546
<212>  PRT
<213>  Artificial Sequence

<220
<223>  FKBP(F36V)-
TPOR/MPLR(478-582)-IL2Rbsmall(339-379,393-433,518-551)-IL21R(322-538)

<400>  275

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                   10                  15


Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30


Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45


Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60


Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80


Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95


Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
            100                 105                 110


Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile Ser Leu Val Thr Ala
        115                 120                 125
```

```
Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu
    130                 135                 140

Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp
145                 150                 155                 160

Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp
                165                 170                 175

Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys Glu
            180                 185                 190

Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg
        195                 200                 205

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

Ser Ser Asn His Ser Leu Thr Ser Cys Phe Thr Asn Gln Gly Tyr Phe
225                 230                 235                 240

Phe Phe His Leu Pro Asp Ala Leu Glu Ile Glu Ala Cys Gln Asp Glu
                245                 250                 255

Gly Val Ala Gly Ala Pro Thr Gly Ser Ser Pro Gln Pro Leu Gln Pro
            260                 265                 270

Leu Ser Gly Glu Asp Asp Ala Tyr Cys Thr Phe Pro Ser Arg Asp Asp
        275                 280                 285

Leu Leu Leu Phe Ser Pro Ser Gly Gln Gly Glu Phe Arg Ala Leu Asn
    290                 295                 300

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

Gln Gly Gln Asp Pro Thr His Leu Val Pro Arg Ser Pro Ala Lys Arg
                325                 330                 335

Leu Gln Leu Thr Glu Leu Gln Glu Pro Ala Glu Leu Val Glu Ser Asp
```

```
            340                 345                 350

Gly Val Pro Lys Pro Ser Phe Trp Pro Thr Ala Gln Asn Ser Gly Gly
        355                 360                 365

Ser Ala Tyr Ser Glu Glu Arg Asp Arg Pro Tyr Gly Leu Val Ser Ile
    370                 375                 380

Asp Thr Val Thr Val Leu Asp Ala Glu Gly Pro Cys Thr Trp Pro Cys
385                 390                 395                 400

Ser Cys Glu Asp Asp Gly Tyr Pro Ala Leu Asp Leu Asp Ala Gly Leu
                405                 410                 415

Glu Pro Ser Pro Gly Leu Glu Asp Pro Leu Leu Asp Ala Gly Thr Thr
            420                 425                 430

Val Leu Ser Cys Gly Cys Val Ser Ala Gly Ser Pro Gly Leu Gly Gly
        435                 440                 445

Pro Leu Gly Ser Leu Leu Asp Arg Leu Lys Pro Pro Leu Ala Asp Gly
    450                 455                 460

Glu Asp Trp Ala Gly Gly Leu Pro Trp Gly Gly Arg Ser Pro Gly Gly
465                 470                 475                 480

Val Ser Glu Ser Glu Ala Gly Ser Pro Leu Ala Gly Leu Asp Met Asp
                485                 490                 495

Thr Phe Asp Ser Gly Phe Val Gly Ser Asp Cys Ser Ser Pro Val Glu
            500                 505                 510

Cys Asp Phe Thr Ser Pro Gly Asp Glu Gly Pro Pro Arg Ser Tyr Leu
        515                 520                 525

Arg Gln Trp Val Val Ile Pro Pro Pro Leu Ser Ser Pro Gly Pro Gln
    530                 535                 540

Ala Ser
545
```

<210> 276
<211> 546
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)- TPOR/MPLR(478-582)-
IL21R(322-538)-IL2Rbsmall(339-379,393-433,518-551)

<400> 276

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1   5   10   15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20   25   30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35   40   45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50   55   60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65   70   75   80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85   90   95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
            100   105   110

Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile Ser Leu Val Thr Ala
        115   120   125

Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu
    130   135   140

Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp
145   150   155   160

Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp
                165   170   175

```
Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys Glu
            180                 185                 190

Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg
        195                 200                 205

Thr Pro Leu Pro Leu Pro Arg Ser Pro Ala Lys Arg Leu Gln Leu Thr
    210                 215                 220

Glu Leu Gln Glu Pro Ala Glu Leu Val Glu Ser Asp Gly Val Pro Lys
225                 230                 235                 240

Pro Ser Phe Trp Pro Thr Ala Gln Asn Ser Gly Gly Ser Ala Tyr Ser
                245                 250                 255

Glu Glu Arg Asp Arg Pro Tyr Gly Leu Val Ser Ile Asp Thr Val Thr
            260                 265                 270

Val Leu Asp Ala Glu Gly Pro Cys Thr Trp Pro Cys Ser Cys Glu Asp
        275                 280                 285

Asp Gly Tyr Pro Ala Leu Asp Leu Asp Ala Gly Leu Glu Pro Ser Pro
    290                 295                 300

Gly Leu Glu Asp Pro Leu Leu Asp Ala Gly Thr Thr Val Leu Ser Cys
305                 310                 315                 320

Gly Cys Val Ser Ala Gly Ser Pro Gly Leu Gly Gly Pro Leu Gly Ser
                325                 330                 335

Leu Leu Asp Arg Leu Lys Pro Pro Leu Ala Asp Gly Glu Asp Trp Ala
            340                 345                 350

Gly Gly Leu Pro Trp Gly Gly Arg Ser Pro Gly Gly Val Ser Glu Ser
        355                 360                 365

Glu Ala Gly Ser Pro Leu Ala Gly Leu Asp Met Asp Thr Phe Asp Ser
    370                 375                 380
```

```
Gly Phe Val Gly Ser Asp Cys Ser Ser Pro Val Glu Cys Asp Phe Thr
385                 390                 395                 400

Ser Pro Gly Asp Glu Gly Pro Pro Arg Ser Tyr Leu Arg Gln Trp Val
                405                 410                 415

Val Ile Pro Pro Pro Leu Ser Ser Pro Gly Pro Gln Ala Ser Gln Gln
            420                 425                 430

Asp Lys Val Pro Glu Pro Ala Ser Leu Ser Ser Asn His Ser Leu Thr
        435                 440                 445

Ser Cys Phe Thr Asn Gln Gly Tyr Phe Phe Phe His Leu Pro Asp Ala
    450                 455                 460

Leu Glu Ile Glu Ala Cys Gln Asp Glu Gly Val Ala Gly Ala Pro Thr
465                 470                 475                 480

Gly Ser Ser Pro Gln Pro Leu Gln Pro Leu Ser Gly Glu Asp Asp Ala
                485                 490                 495

Tyr Cys Thr Phe Pro Ser Arg Asp Asp Leu Leu Leu Phe Ser Pro Ser
            500                 505                 510

Gly Gln Gly Glu Phe Arg Ala Leu Asn Ala Arg Leu Pro Leu Asn Thr
        515                 520                 525

Asp Ala Tyr Leu Ser Leu Gln Glu Leu Gln Gly Gln Asp Pro Thr His
    530                 535                 540

Leu Val
545
```

<210> 277
<211> 432
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)- TPOR/MPLR(478-582)-IL2Rbsmall(393-433,518-551)-IL7R(316-459)

<400> 277

```
Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                   10                  15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
            100                 105                 110

Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile Ser Leu Val Thr Ala
        115                 120                 125

Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu
    130                 135                 140

Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp
145                 150                 155                 160

Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp
                165                 170                 175

Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys Glu
            180                 185                 190

Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg
        195                 200                 205

Thr Pro Leu Pro Leu Asp Glu Gly Val Ala Gly Ala Pro Thr Gly Ser
    210                 215                 220
```

```
Ser Pro Gln Pro Leu Gln Pro Leu Ser Gly Glu Asp Asp Ala Tyr Cys
225                 230                 235                 240

Thr Phe Pro Ser Arg Asp Asp Leu Leu Leu Phe Ser Pro Ser Gly Gln
                245                 250                 255

Gly Glu Phe Arg Ala Leu Asn Ala Arg Leu Pro Leu Asn Thr Asp Ala
            260                 265                 270

Tyr Leu Ser Leu Gln Glu Leu Gln Gly Gln Asp Pro Thr His Leu Val
        275                 280                 285

Ala Arg Asp Glu Val Glu Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln
    290                 295                 300

Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly Asp Val Gln Ser Pro
305                 310                 315                 320

Asn Cys Pro Ser Glu Asp Val Val Ile Thr Pro Glu Ser Phe Gly Arg
                325                 330                 335

Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn Val Ser Ala Cys Asp Ala
            340                 345                 350

Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg Glu Ser Gly Lys
        355                 360                 365

Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu Ser Leu Gly Thr Thr
    370                 375                 380

Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln Ser Gly Ile Leu Thr
385                 390                 395                 400

Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu Thr Ser Leu Gly Ser
                405                 410                 415

Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln Asn Gln
            420                 425                 430
```

<210> 278
<211> 432
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)- TPOR/MPLR(478-582)-IL7R(316-459)-IL2Rbsmall(393-433,518-551)

<400> 278

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1 5 10 15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
20 25 30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
35 40 45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
50 55 60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65 70 75 80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
85 90 95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
100 105 110

Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile Ser Leu Val Thr Ala
115 120 125

Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu
130 135 140

Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp
145 150 155 160

Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp
165 170 175

```
Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys Glu
            180                 185                 190

Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg
        195                 200                 205

Thr Pro Leu Pro Leu Ala Arg Asp Glu Val Glu Gly Phe Leu Gln Asp
    210                 215                 220

Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly
225                 230                 235                 240

Asp Val Gln Ser Pro Asn Cys Pro Ser Glu Asp Val Val Ile Thr Pro
                245                 250                 255

Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn Val
            260                 265                 270

Ser Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys
        275                 280                 285

Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu
    290                 295                 300

Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln
305                 310                 315                 320

Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu
                325                 330                 335

Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser
            340                 345                 350

Phe Tyr Gln Asn Gln Asp Glu Gly Val Ala Gly Ala Pro Thr Gly Ser
        355                 360                 365

Ser Pro Gln Pro Leu Gln Pro Leu Ser Gly Glu Asp Asp Ala Tyr Cys
    370                 375                 380

Thr Phe Pro Ser Arg Asp Asp Leu Leu Leu Phe Ser Pro Ser Gly Gln
385                 390                 395                 400
```

Gly Glu Phe Arg Ala Leu Asn Ala Arg Leu Pro Leu Asn Thr Asp Ala
405 410 415

Tyr Leu Ser Leu Gln Glu Leu Gln Gly Gln Asp Pro Thr His Leu Val
420 425 430

<210> 279
<211> 473
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)- TPOR/MPLR(478-582)-
IL2Rbsmall(339-379,393-433,518-551)-IL7R(316-459)

<400> 279

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1 5 10 15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
20 25 30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
35 40 45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
50 55 60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65 70 75 80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
85 90 95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
100 105 110

Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile Ser Leu Val Thr Ala
115 120 125

Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu

```
    130                 135                 140

Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp
145                 150                 155                 160

Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp
                165                 170                 175

Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys Glu
            180                 185                 190

Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg
        195                 200                 205

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

Ser Ser Asn His Ser Leu Thr Ser Cys Phe Thr Asn Gln Gly Tyr Phe
225                 230                 235                 240

Phe Phe His Leu Pro Asp Ala Leu Glu Ile Glu Ala Cys Gln Asp Glu
                245                 250                 255

Gly Val Ala Gly Ala Pro Thr Gly Ser Ser Pro Gln Pro Leu Gln Pro
            260                 265                 270

Leu Ser Gly Glu Asp Asp Ala Tyr Cys Thr Phe Pro Ser Arg Asp Asp
        275                 280                 285

Leu Leu Leu Phe Ser Pro Ser Gly Gln Gly Glu Phe Arg Ala Leu Asn
    290                 295                 300

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

Gln Gly Gln Asp Pro Thr His Leu Val Ala Arg Asp Glu Val Glu Gly
                325                 330                 335

Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys Gln
            340                 345                 350
```

Arg Leu Gly Gly Asp Val Gln Ser Pro Asn Cys Pro Ser Glu Asp Val
        355   360   365

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

Ala Gly Asn Val Ser Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg
385   390   395   400

Ser Leu Asp Cys Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr Gln
                405   410   415

Asp Leu Leu Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro
            420   425   430

Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly
        435   440   445

Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val
    450   455   460

Thr Met Ser Ser Phe Tyr Gln Asn Gln
465   470

<210> 280
<211> 473
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)- TPOR/MPLR(478-582)-IL7R(316-459)-
IL2Rbsmall(339-379,393-433,518-551)

<400> 280

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1   5   10   15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20   25   30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35   40   45

```
Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
            100                 105                 110

Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile Ser Leu Val Thr Ala
        115                 120                 125

Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu
    130                 135                 140

Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp
145                 150                 155                 160

Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp
                165                 170                 175

Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys Glu
            180                 185                 190

Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg
        195                 200                 205

Thr Pro Leu Pro Leu Ala Arg Asp Glu Val Glu Gly Phe Leu Gln Asp
    210                 215                 220

Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly
225                 230                 235                 240

Asp Val Gln Ser Pro Asn Cys Pro Ser Glu Asp Val Val Ile Thr Pro
                245                 250                 255
```

```
Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn Val
            260                 265                 270

Ser Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys
        275                 280                 285

Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu
    290                 295                 300

Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln
305                 310                 315                 320

Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu
                325                 330                 335

Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser
            340                 345                 350

Phe Tyr Gln Asn Gln Gln Gln Asp Lys Val Pro Glu Pro Ala Ser Leu
        355                 360                 365

Ser Ser Asn His Ser Leu Thr Ser Cys Phe Thr Asn Gln Gly Tyr Phe
    370                 375                 380

Phe Phe His Leu Pro Asp Ala Leu Glu Ile Glu Ala Cys Gln Asp Glu
385                 390                 395                 400

Gly Val Ala Gly Ala Pro Thr Gly Ser Ser Pro Gln Pro Leu Gln Pro
                405                 410                 415

Leu Ser Gly Glu Asp Asp Ala Tyr Cys Thr Phe Pro Ser Arg Asp Asp
            420                 425                 430

Leu Leu Leu Phe Ser Pro Ser Gly Gln Gly Glu Phe Arg Ala Leu Asn
        435                 440                 445

Ala Arg Leu Pro Leu Asn Thr Asp Ala Tyr Leu Ser Leu Gln Glu Leu
    450                 455                 460

Gln Gly Gln Asp Pro Thr His Leu Val
465                 470
```

<210> 281
<211> 408
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)-PD1(156-191)-TPOR/MPLR
(514-582)-IL7R(316-459)-IL12Rb2(775-825)

<400> 281

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1   5   10   15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20   25   30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35   40   45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50   55   60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65   70   75   80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85   90   95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Pro Ser Pro Ser
            100   105   110

Pro Arg Pro Ala Gly Gln Phe Gln Thr Leu Val Val Gly Val Val Gly
        115   120   125

Gly Leu Leu Gly Ser Leu Val Leu Leu Val Trp Val Leu Ala Val Ile
    130   135   140

Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp
145   150   155   160

Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp

```
                165                 170                 175

Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys Glu
            180                 185                 190

Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg
        195                 200                 205

Thr Pro Leu Pro Leu Ala Arg Asp Glu Val Glu Gly Phe Leu Gln Asp
    210                 215                 220

Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly
225                 230                 235                 240

Asp Val Gln Ser Pro Asn Cys Pro Ser Glu Asp Val Val Ile Thr Pro
                245                 250                 255

Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn Val
            260                 265                 270

Ser Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys
        275                 280                 285

Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu
    290                 295                 300

Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln
305                 310                 315                 320

Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu
                325                 330                 335

Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser
            340                 345                 350

Phe Tyr Gln Asn Gln Ser Asp Pro Lys Pro Glu Asn Pro Ala Cys Pro
        355                 360                 365

Trp Thr Val Leu Pro Ala Gly Asp Leu Pro Thr His Asp Gly Tyr Leu
    370                 375                 380
```

Pro Ser Asn Ile Asp Asp Leu Pro Ser His Glu Ala Pro Leu Ala Asp
385 390 395 400

Ser Leu Glu Glu Leu Glu Pro Gln
405

<210> 282
<211> 267
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)- TPOR/MPLR(478-582)-EGFR(1122-1165)

<400> 282

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1 5 10 15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
20 25 30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
35 40 45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
50 55 60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65 70 75 80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
85 90 95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
100 105 110

Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile Ser Leu Val Thr Ala
115 120 125

Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu
130 135 140

```
Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp
145                 150                 155                 160


Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp
                165                 170                 175


Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys Glu
            180                 185                 190


Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg
        195                 200                 205


Thr Pro Leu Pro Leu Pro Glu Tyr Leu Asn Thr Val Gln Pro Thr Cys
    210                 215                 220


Val Asn Ser Thr Phe Asp Ser Pro Ala His Trp Ala Gln Lys Gly Ser
225                 230                 235                 240


His Gln Ile Ser Leu Asp Asn Pro Asp Tyr Gln Gln Asp Phe Phe Pro
                245                 250                 255


Lys Glu Ala Lys Pro Asn Gly Ile Phe Lys Gly
            260                 265


<210>  283
<211>  408
<212>  PRT
<213>  Artificial Sequence

<220
<223>  FKBP(F36V)- TPOR/MPLR(478-582)-IL7R(316-459)-IL12Rb2(775-825)FKBP switch
containing  wildtype TpoR TM sequence

<400>  283

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                   10                  15


Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30


Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45
```

```
Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
            100                 105                 110

Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile Ser Leu Val Thr Ala
        115                 120                 125

Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu
    130                 135                 140

Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp
145                 150                 155                 160

Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp
                165                 170                 175

Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys Glu
            180                 185                 190

Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg
        195                 200                 205

Thr Pro Leu Pro Leu Ala Arg Asp Glu Val Glu Gly Phe Leu Gln Asp
    210                 215                 220

Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly
225                 230                 235                 240

Asp Val Gln Ser Pro Asn Cys Pro Ser Glu Asp Val Val Ile Thr Pro
                245                 250                 255
```

```
Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn Val
            260                 265                 270

Ser Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys
        275                 280                 285

Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu
    290                 295                 300

Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln
305                 310                 315                 320

Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu
                325                 330                 335

Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser
            340                 345                 350

Phe Tyr Gln Asn Gln Ser Asp Pro Lys Pro Glu Asn Pro Ala Cys Pro
        355                 360                 365

Trp Thr Val Leu Pro Ala Gly Asp Leu Pro Thr His Asp Gly Tyr Leu
    370                 375                 380

Pro Ser Asn Ile Asp Asp Leu Pro Ser His Glu Ala Pro Leu Ala Asp
385                 390                 395                 400

Ser Leu Glu Glu Leu Glu Pro Gln
                405
```

<210> 284
<211> 407
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)- TPOR/MPLR(478-582;N-1)-IL7R(316-459)-IL12Rb2(775-825)

<400> 284

```
Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                   10                  15
```

```
Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
            100                 105                 110

Arg Val Glu Thr Ala Thr Glu Thr Trp Ile Ser Leu Val Thr Ala Leu
        115                 120                 125

His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu Arg
    130                 135                 140

Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp Pro
145                 150                 155                 160

Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp Thr
                165                 170                 175

Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys Glu Glu
            180                 185                 190

Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg Thr
        195                 200                 205

Pro Leu Pro Leu Ala Arg Asp Glu Val Glu Gly Phe Leu Gln Asp Thr
    210                 215                 220

Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly Asp
225                 230                 235                 240
```

```
Val Gln Ser Pro Asn Cys Pro Ser Glu Asp Val Val Ile Thr Pro Glu
                245                 250                 255

Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn Val Ser
            260                 265                 270

Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg
        275                 280                 285

Glu Ser Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu Ser
    290                 295                 300

Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln Ser
305                 310                 315                 320

Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu Thr
                325                 330                 335

Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser Phe
            340                 345                 350

Tyr Gln Asn Gln Ser Asp Pro Lys Pro Glu Asn Pro Ala Cys Pro Trp
        355                 360                 365

Thr Val Leu Pro Ala Gly Asp Leu Pro Thr His Asp Gly Tyr Leu Pro
    370                 375                 380

Ser Asn Ile Asp Asp Leu Pro Ser His Glu Ala Pro Leu Ala Asp Ser
385                 390                 395                 400

Leu Glu Glu Leu Glu Pro Gln
                405
```

<210> 285
<211> 406
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)- TPOR/MPLR(478-582;N-2)-IL7R(316-459)-IL12Rb2(775-825)

<400> 285

```
Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                  10                  15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
            100                 105                 110

Arg Val Glu Thr Ala Thr Glu Thr Ile Ser Leu Val Thr Ala Leu His
        115                 120                 125

Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu Arg Trp
    130                 135                 140

Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp Pro Ser
145                 150                 155                 160

Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp Thr Ala
                165                 170                 175

Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys Glu Glu Val
            180                 185                 190

Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg Thr Pro
        195                 200                 205
```

```
Leu Pro Leu Ala Arg Asp Glu Val Glu Gly Phe Leu Gln Asp Thr Phe
    210                 215                 220

Pro Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly Asp Val
225                 230                 235                 240

Gln Ser Pro Asn Cys Pro Ser Glu Asp Val Val Ile Thr Pro Glu Ser
                245                 250                 255

Phe Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn Val Ser Ala
            260                 265                 270

Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg Glu
        275                 280                 285

Ser Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu Ser Leu
    290                 295                 300

Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln Ser Gly
305                 310                 315                 320

Ile Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu Thr Ser
                325                 330                 335

Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr
            340                 345                 350

Gln Asn Gln Ser Asp Pro Lys Pro Glu Asn Pro Ala Cys Pro Trp Thr
        355                 360                 365

Val Leu Pro Ala Gly Asp Leu Pro Thr His Asp Gly Tyr Leu Pro Ser
    370                 375                 380

Asn Ile Asp Asp Leu Pro Ser His Glu Ala Pro Leu Ala Asp Ser Leu
385                 390                 395                 400

Glu Glu Leu Glu Pro Gln
                405
```

<210> 286
<211> 407

<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)- TPOR/MPLR(478-582;N-2+1)-IL7R(316-459)-IL12Rb2(775-825)

<400> 286

```
Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                  10                  15


Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30


Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45


Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60


Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80


Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95


Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
            100                 105                 110


Arg Val Glu Thr Ala Thr Glu Thr Leu Ile Ser Leu Val Thr Ala Leu
        115                 120                 125


His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu Arg
    130                 135                 140


Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp Pro
145                 150                 155                 160


Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp Thr
                165                 170                 175


Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys Glu Glu
            180                 185                 190
```

```
Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg Thr
        195                 200                 205

Pro Leu Pro Leu Ala Arg Asp Glu Val Glu Gly Phe Leu Gln Asp Thr
    210                 215                 220

Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly Asp
225                 230                 235                 240

Val Gln Ser Pro Asn Cys Pro Ser Glu Asp Val Val Ile Thr Pro Glu
                245                 250                 255

Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn Val Ser
            260                 265                 270

Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg
        275                 280                 285

Glu Ser Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu Ser
    290                 295                 300

Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln Ser
305                 310                 315                 320

Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu Thr
                325                 330                 335

Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser Phe
            340                 345                 350

Tyr Gln Asn Gln Ser Asp Pro Lys Pro Glu Asn Pro Ala Cys Pro Trp
        355                 360                 365

Thr Val Leu Pro Ala Gly Asp Leu Pro Thr His Asp Gly Tyr Leu Pro
    370                 375                 380

Ser Asn Ile Asp Asp Leu Pro Ser His Glu Ala Pro Leu Ala Asp Ser
385                 390                 395                 400
```

Leu Glu Glu Leu Glu Pro Gln
405

<210> 287
<211> 405
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)- TPOR/MPLR(478-582;N-3)-IL7R(316-459)-IL12Rb2(775-825)

<400> 287

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1 5 10 15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
20 25 30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
35 40 45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
50 55 60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65 70 75 80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
85 90 95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
100 105 110

Arg Val Glu Thr Ala Thr Glu Thr Ser Leu Val Thr Ala Leu His Leu
115 120 125

Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu Arg Trp Gln
130 135 140

Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp Pro Ser Leu
145 150 155 160

```
Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp Thr Ala Ala
                165                 170                 175

Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys Glu Glu Val Glu
            180                 185                 190

Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg Thr Pro Leu
        195                 200                 205

Pro Leu Ala Arg Asp Glu Val Glu Gly Phe Leu Gln Asp Thr Phe Pro
    210                 215                 220

Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly Asp Val Gln
225                 230                 235                 240

Ser Pro Asn Cys Pro Ser Glu Asp Val Val Ile Thr Pro Glu Ser Phe
                245                 250                 255

Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn Val Ser Ala Cys
            260                 265                 270

Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg Glu Ser
        275                 280                 285

Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu Ser Leu Gly
    290                 295                 300

Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln Ser Gly Ile
305                 310                 315                 320

Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu Thr Ser Leu
                325                 330                 335

Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln
            340                 345                 350

Asn Gln Ser Asp Pro Lys Pro Glu Asn Pro Ala Cys Pro Trp Thr Val
        355                 360                 365

Leu Pro Ala Gly Asp Leu Pro Thr His Asp Gly Tyr Leu Pro Ser Asn
    370                 375                 380
```

```
Ile Asp Asp Leu Pro Ser His Glu Ala Pro Leu Ala Asp Ser Leu Glu
385                 390                 395                 400


Glu Leu Glu Pro Gln
                405


<210>  288
<211>  404
<212>  PRT
<213>  Artificial Sequence

<220
<223>  FKBP(F36V)- TPOR/MPLR(478-582;N-4)-IL7R(316-459)-IL12Rb2(775-825)

<400>  288

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                   10                  15


Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30


Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45


Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60


Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80


Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95


Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
            100                 105                 110


Arg Val Glu Thr Ala Thr Glu Thr Leu Val Thr Ala Leu His Leu Val
        115                 120                 125


Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu Arg Trp Gln Phe
    130                 135                 140
```

```
Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp Pro Ser Leu Pro
145                 150                 155                 160

Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp Thr Ala Ala Leu
                165                 170                 175

Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys Glu Glu Val Glu Pro
            180                 185                 190

Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg Thr Pro Leu Pro
        195                 200                 205

Leu Ala Arg Asp Glu Val Glu Gly Phe Leu Gln Asp Thr Phe Pro Gln
    210                 215                 220

Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly Asp Val Gln Ser
225                 230                 235                 240

Pro Asn Cys Pro Ser Glu Asp Val Val Ile Thr Pro Glu Ser Phe Gly
                245                 250                 255

Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn Val Ser Ala Cys Asp
            260                 265                 270

Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg Glu Ser Gly
        275                 280                 285

Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu Ser Leu Gly Thr
    290                 295                 300

Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln Ser Gly Ile Leu
305                 310                 315                 320

Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu Thr Ser Leu Gly
                325                 330                 335

Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln Asn
            340                 345                 350
```

Gln Ser Asp Pro Lys Pro Glu Asn Pro Ala Cys Pro Trp Thr Val Leu
355 360 365

Pro Ala Gly Asp Leu Pro Thr His Asp Gly Tyr Leu Pro Ser Asn Ile
370 375 380

Asp Asp Leu Pro Ser His Glu Ala Pro Leu Ala Asp Ser Leu Glu Glu
385 390 395 400

Leu Glu Pro Gln

<210> 289
<211> 405
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)- TPOR/MPLR(478-582;N-4+1)-IL7R(316-459)-IL12Rb2(775-825)

<400> 289

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1 5 10 15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
20 25 30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
35 40 45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
50 55 60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65 70 75 80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
85 90 95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
100 105 110

```
Arg Val Glu Thr Ala Thr Glu Thr Ile Leu Val Thr Ala Leu His Leu
        115                 120                 125

Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu Arg Trp Gln
    130                 135                 140

Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp Pro Ser Leu
145                 150                 155                 160

Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp Thr Ala Ala
                165                 170                 175

Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys Glu Glu Val Glu
            180                 185                 190

Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg Thr Pro Leu
        195                 200                 205

Pro Leu Ala Arg Asp Glu Val Glu Gly Phe Leu Gln Asp Thr Phe Pro
    210                 215                 220

Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly Asp Val Gln
225                 230                 235                 240

Ser Pro Asn Cys Pro Ser Glu Asp Val Val Ile Thr Pro Glu Ser Phe
                245                 250                 255

Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn Val Ser Ala Cys
            260                 265                 270

Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg Glu Ser
        275                 280                 285

Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu Ser Leu Gly
    290                 295                 300

Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln Ser Gly Ile
305                 310                 315                 320

Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu Thr Ser Leu
                325                 330                 335
```

Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln
340 345 350

Asn Gln Ser Asp Pro Lys Pro Glu Asn Pro Ala Cys Pro Trp Thr Val
355 360 365

Leu Pro Ala Gly Asp Leu Pro Thr His Asp Gly Tyr Leu Pro Ser Asn
370 375 380

Ile Asp Asp Leu Pro Ser His Glu Ala Pro Leu Ala Asp Ser Leu Glu
385 390 395 400

Glu Leu Glu Pro Gln
405

<210> 290
<211> 403
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)- TPOR/MPLR(478-582;N-5)-IL7R(316-459)-IL12Rb2(775-825)

<400> 290

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1 5 10 15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
20 25 30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
35 40 45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
50 55 60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65 70 75 80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
85 90 95

```
Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
            100                 105                 110

Arg Val Glu Thr Ala Thr Glu Thr Val Thr Ala Leu His Leu Val Leu
        115                 120                 125

Gly Leu Ser Ala Val Leu Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro
    130                 135                 140

Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp Pro Ser Leu Pro Asp
145                 150                 155                 160

Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser
                165                 170                 175

Pro Pro Lys Ala Thr Val Ser Asp Thr Cys Glu Glu Val Glu Pro Ser
            180                 185                 190

Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu
        195                 200                 205

Ala Arg Asp Glu Val Glu Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln
    210                 215                 220

Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly Asp Val Gln Ser Pro
225                 230                 235                 240

Asn Cys Pro Ser Glu Asp Val Val Ile Thr Pro Glu Ser Phe Gly Arg
                245                 250                 255

Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn Val Ser Ala Cys Asp Ala
            260                 265                 270

Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg Glu Ser Gly Lys
        275                 280                 285

Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu Ser Leu Gly Thr Thr
    290                 295                 300
```

```
Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln Ser Gly Ile Leu Thr
305                 310                 315                 320

Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu Thr Ser Leu Gly Ser
                325                 330                 335

Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln Asn Gln
            340                 345                 350

Ser Asp Pro Lys Pro Glu Asn Pro Ala Cys Pro Trp Thr Val Leu Pro
        355                 360                 365

Ala Gly Asp Leu Pro Thr His Asp Gly Tyr Leu Pro Ser Asn Ile Asp
    370                 375                 380

Asp Leu Pro Ser His Glu Ala Pro Leu Ala Asp Ser Leu Glu Glu Leu
385                 390                 395                 400

Glu Pro Gln
```

<210> 291
<211> 402
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)- TPOR/MPLR(478-582;N-6)-IL7R(316-459)-IL12Rb2(775-825)

<400> 291

```
Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                   10                  15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60
```

```
Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
            100                 105                 110

Arg Val Glu Thr Ala Thr Glu Thr Thr Ala Leu His Leu Val Leu Gly
        115                 120                 125

Leu Ser Ala Val Leu Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala
    130                 135                 140

His Tyr Arg Arg Leu Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu
145                 150                 155                 160

His Arg Val Leu Gly Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro
                165                 170                 175

Pro Lys Ala Thr Val Ser Asp Thr Cys Glu Glu Val Glu Pro Ser Leu
            180                 185                 190

Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu Ala
        195                 200                 205

Arg Asp Glu Val Glu Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu
    210                 215                 220

Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly Asp Val Gln Ser Pro Asn
225                 230                 235                 240

Cys Pro Ser Glu Asp Val Val Ile Thr Pro Glu Ser Phe Gly Arg Asp
                245                 250                 255

Ser Ser Leu Thr Cys Leu Ala Gly Asn Val Ser Ala Cys Asp Ala Pro
            260                 265                 270

Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg Glu Ser Gly Lys Asn
        275                 280                 285
```

```
Gly Pro His Val Tyr Gln Asp Leu Leu Leu Ser Leu Gly Thr Thr Asn
    290                 295                 300

Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu
305                 310                 315                 320

Asn Pro Val Ala Gln Gly Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn
                325                 330                 335

Gln Glu Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln Asn Gln Ser
            340                 345                 350

Asp Pro Lys Pro Glu Asn Pro Ala Cys Pro Trp Thr Val Leu Pro Ala
        355                 360                 365

Gly Asp Leu Pro Thr His Asp Gly Tyr Leu Pro Ser Asn Ile Asp Asp
    370                 375                 380

Leu Pro Ser His Glu Ala Pro Leu Ala Asp Ser Leu Glu Glu Leu Glu
385                 390                 395                 400

Pro Gln
```

<210> 292
<211> 401
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)- TPOR/MPLR(478-582;N-7)-IL7R(316-459)-IL12Rb2(775-825)

<400> 292

```
Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                   10                  15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45
```

```
Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
            100                 105                 110

Arg Val Glu Thr Ala Thr Glu Thr Ala Leu His Leu Val Leu Gly Leu
        115                 120                 125

Ser Ala Val Leu Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His
    130                 135                 140

Tyr Arg Arg Leu Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His
145                 150                 155                 160

Arg Val Leu Gly Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro
                165                 170                 175

Lys Ala Thr Val Ser Asp Thr Cys Glu Glu Val Glu Pro Ser Leu Leu
            180                 185                 190

Glu Ile Leu Pro Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu Ala Arg
        195                 200                 205

Asp Glu Val Glu Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu
    210                 215                 220

Glu Ser Glu Lys Gln Arg Leu Gly Gly Asp Val Gln Ser Pro Asn Cys
225                 230                 235                 240

Pro Ser Glu Asp Val Val Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser
                245                 250                 255
```

```
Ser Leu Thr Cys Leu Ala Gly Asn Val Ser Ala Cys Asp Ala Pro Ile
            260                 265                 270

Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg Glu Ser Gly Lys Asn Gly
        275                 280                 285

Pro His Val Tyr Gln Asp Leu Leu Leu Ser Leu Gly Thr Thr Asn Ser
    290                 295                 300

Thr Leu Pro Pro Pro Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn
305                 310                 315                 320

Pro Val Ala Gln Gly Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln
                325                 330                 335

Glu Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln Asn Gln Ser Asp
            340                 345                 350

Pro Lys Pro Glu Asn Pro Ala Cys Pro Trp Thr Val Leu Pro Ala Gly
        355                 360                 365

Asp Leu Pro Thr His Asp Gly Tyr Leu Pro Ser Asn Ile Asp Asp Leu
    370                 375                 380

Pro Ser His Glu Ala Pro Leu Ala Asp Ser Leu Glu Glu Leu Glu Pro
385                 390                 395                 400

Gln
```

<210> 293
<211> 400
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)- TPOR/MPLR(478-582;N-8)-IL7R(316-459)-IL12Rb2(775-825)

<400> 293

```
Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                   10                  15
```

```
Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
            100                 105                 110

Arg Val Glu Thr Ala Thr Glu Thr Leu His Leu Val Leu Gly Leu Ser
        115                 120                 125

Ala Val Leu Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr
    130                 135                 140

Arg Arg Leu Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg
145                 150                 155                 160

Val Leu Gly Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys
                165                 170                 175

Ala Thr Val Ser Asp Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu
            180                 185                 190

Ile Leu Pro Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu Ala Arg Asp
        195                 200                 205

Glu Val Glu Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu
    210                 215                 220

Ser Glu Lys Gln Arg Leu Gly Gly Asp Val Gln Ser Pro Asn Cys Pro
225                 230                 235                 240
```

Ser Glu Asp Val Val Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser Ser
245 250 255

Leu Thr Cys Leu Ala Gly Asn Val Ser Ala Cys Asp Ala Pro Ile Leu
260 265 270

Ser Ser Ser Arg Ser Leu Asp Cys Arg Glu Ser Gly Lys Asn Gly Pro
275 280 285

His Val Tyr Gln Asp Leu Leu Leu Ser Leu Gly Thr Thr Asn Ser Thr
290 295 300

Leu Pro Pro Pro Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro
305 310 315 320

Val Ala Gln Gly Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu
325 330 335

Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln Asn Gln Ser Asp Pro
340 345 350

Lys Pro Glu Asn Pro Ala Cys Pro Trp Thr Val Leu Pro Ala Gly Asp
355 360 365

Leu Pro Thr His Asp Gly Tyr Leu Pro Ser Asn Ile Asp Asp Leu Pro
370 375 380

Ser His Glu Ala Pro Leu Ala Asp Ser Leu Glu Glu Leu Glu Pro Gln
385 390 395 400

<210> 294
<211> 399
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)- TPOR/MPLR(478-582;N-9)-IL7R(316-459)-IL12Rb2(775-825)

<400> 294

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1 5 10 15

```
Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
            100                 105                 110

Arg Val Glu Thr Ala Thr Glu Thr His Leu Val Leu Gly Leu Ser Ala
        115                 120                 125

Val Leu Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg
    130                 135                 140

Arg Leu Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val
145                 150                 155                 160

Leu Gly Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala
                165                 170                 175

Thr Val Ser Asp Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile
            180                 185                 190

Leu Pro Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu Ala Arg Asp Glu
        195                 200                 205

Val Glu Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu Ser
    210                 215                 220
```

```
Glu Lys Gln Arg Leu Gly Gly Asp Val Gln Ser Pro Asn Cys Pro Ser
225                 230                 235                 240


Glu Asp Val Val Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser Ser Leu
                245                 250                 255


Thr Cys Leu Ala Gly Asn Val Ser Ala Cys Asp Ala Pro Ile Leu Ser
            260                 265                 270


Ser Ser Arg Ser Leu Asp Cys Arg Glu Ser Gly Lys Asn Gly Pro His
        275                 280                 285


Val Tyr Gln Asp Leu Leu Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu
    290                 295                 300


Pro Pro Pro Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro Val
305                 310                 315                 320


Ala Gln Gly Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu
                325                 330                 335


Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln Asn Gln Ser Asp Pro Lys
            340                 345                 350


Pro Glu Asn Pro Ala Cys Pro Trp Thr Val Leu Pro Ala Gly Asp Leu
        355                 360                 365


Pro Thr His Asp Gly Tyr Leu Pro Ser Asn Ile Asp Asp Leu Pro Ser
    370                 375                 380


His Glu Ala Pro Leu Ala Asp Ser Leu Glu Glu Leu Glu Pro Gln
385                 390                 395


<210>  295
<211>  398
<212>  PRT
<213>  Artificial Sequence

<220
<223>  FKBP(F36V)- TPOR/MPLR(478-582;N-10)-IL7R(316-459)-IL12Rb2(775-825)

<400>  295
```

```
Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                  10                  15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
            100                 105                 110

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

Leu Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg
    130                 135                 140

Leu Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu
145                 150                 155                 160

Gly Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr
                165                 170                 175

Val Ser Asp Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu
            180                 185                 190

Pro Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu Ala Arg Asp Glu Val
        195                 200                 205

Glu Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu
    210                 215                 220
```

```
Lys Gln Arg Leu Gly Gly Asp Val Gln Ser Pro Asn Cys Pro Ser Glu
225                 230                 235                 240

Asp Val Val Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr
                245                 250                 255

Cys Leu Ala Gly Asn Val Ser Ala Cys Asp Ala Pro Ile Leu Ser Ser
            260                 265                 270

Ser Arg Ser Leu Asp Cys Arg Glu Ser Gly Lys Asn Gly Pro His Val
        275                 280                 285

Tyr Gln Asp Leu Leu Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro
    290                 295                 300

Pro Pro Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro Val Ala
305                 310                 315                 320

Gln Gly Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala
                325                 330                 335

Tyr Val Thr Met Ser Ser Phe Tyr Gln Asn Gln Ser Asp Pro Lys Pro
            340                 345                 350

Glu Asn Pro Ala Cys Pro Trp Thr Val Leu Pro Ala Gly Asp Leu Pro
        355                 360                 365

Thr His Asp Gly Tyr Leu Pro Ser Asn Ile Asp Asp Leu Pro Ser His
    370                 375                 380

Glu Ala Pro Leu Ala Asp Ser Leu Glu Glu Leu Glu Pro Gln
385                 390                 395
```

<210> 296
<211> 397
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)- TPOR/MPLR(478-582;N-11)-IL7R(316-459)-IL12Rb2(775-825)

<400> 296

```
Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                  10                  15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
            100                 105                 110

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

Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu
    130                 135                 140

Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly
145                 150                 155                 160

Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val
                165                 170                 175

Ser Asp Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro
            180                 185                 190

Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu Ala Arg Asp Glu Val Glu
        195                 200                 205
```

```
Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys
    210                 215                 220

Gln Arg Leu Gly Gly Asp Val Gln Ser Pro Asn Cys Pro Ser Glu Asp
225                 230                 235                 240

Val Val Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys
                245                 250                 255

Leu Ala Gly Asn Val Ser Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser
            260                 265                 270

Arg Ser Leu Asp Cys Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr
        275                 280                 285

Gln Asp Leu Leu Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro
    290                 295                 300

Pro Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln
305                 310                 315                 320

Gly Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr
                325                 330                 335

Val Thr Met Ser Ser Phe Tyr Gln Asn Gln Ser Asp Pro Lys Pro Glu
            340                 345                 350

Asn Pro Ala Cys Pro Trp Thr Val Leu Pro Ala Gly Asp Leu Pro Thr
        355                 360                 365

His Asp Gly Tyr Leu Pro Ser Asn Ile Asp Asp Leu Pro Ser His Glu
    370                 375                 380

Ala Pro Leu Ala Asp Ser Leu Glu Glu Leu Glu Pro Gln
385                 390                 395
```

<210> 297
<211> 396
<212> PRT
<213> Artificial Sequence

<220

<223> FKBP(F36V)- TPOR/MPLR(478-582;N-12)-IL7R(316-459)-IL12Rb2(775-825)

<400> 297

```
Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                  10                  15


Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30


Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45


Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60


Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80


Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95


Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
            100                 105                 110


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


Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg
    130                 135                 140


His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln
145                 150                 155                 160


Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser
                165                 170                 175


Asp Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys
            180                 185                 190


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

```
Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys Gln
    210                 215                 220

Arg Leu Gly Gly Asp Val Gln Ser Pro Asn Cys Pro Ser Glu Asp Val
225                 230                 235                 240

Val Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys Leu
                245                 250                 255

Ala Gly Asn Val Ser Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg
            260                 265                 270

Ser Leu Asp Cys Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr Gln
        275                 280                 285

Asp Leu Leu Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro
    290                 295                 300

Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly
305                 310                 315                 320

Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val
                325                 330                 335

Thr Met Ser Ser Phe Tyr Gln Asn Gln Ser Asp Pro Lys Pro Glu Asn
            340                 345                 350

Pro Ala Cys Pro Trp Thr Val Leu Pro Ala Gly Asp Leu Pro Thr His
        355                 360                 365

Asp Gly Tyr Leu Pro Ser Asn Ile Asp Asp Leu Pro Ser His Glu Ala
    370                 375                 380

Pro Leu Ala Asp Ser Leu Glu Glu Leu Glu Pro Gln
385                 390                 395
```

<210> 298
<211> 395
<212> PRT
<213> Artificial Sequence

<220
<223> FKBP(F36V)- TPOR/MPLR(478-582;N-13)-IL7R(316-459)-IL12Rb2(775-825)

<400> 298

```
Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                  10                  15


Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30


Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45


Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60


Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80


Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95


Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
            100                 105                 110


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


Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His
    130                 135                 140


Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr
145                 150                 155                 160


Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp
                165                 170                 175


Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser
            180                 185                 190
```

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

Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg
    210                 215                 220

Leu Gly Gly Asp Val Gln Ser Pro Asn Cys Pro Ser Glu Asp Val Val
225                 230                 235                 240

Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala
                245                 250                 255

Gly Asn Val Ser Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser
            260                 265                 270

Leu Asp Cys Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr Gln Asp
        275                 280                 285

Leu Leu Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe
    290                 295                 300

Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly Gln
305                 310                 315                 320

Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr
                325                 330                 335

Met Ser Ser Phe Tyr Gln Asn Gln Ser Asp Pro Lys Pro Glu Asn Pro
            340                 345                 350

Ala Cys Pro Trp Thr Val Leu Pro Ala Gly Asp Leu Pro Thr His Asp
        355                 360                 365

Gly Tyr Leu Pro Ser Asn Ile Asp Asp Leu Pro Ser His Glu Ala Pro
    370                 375                 380

Leu Ala Asp Ser Leu Glu Glu Leu Glu Pro Gln
385                 390                 395
```

<210> 299
<211> 394

<212> PRT
<213> Artificial Sequence

<220>
<223> FKBP(F36V)- TPOR/MPLR(478-582;N-14)-IL7R(316-459)-IL12Rb2(775-825)

<400> 299

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1 5 10 15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
20 25 30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
35 40 45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
50 55 60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65 70 75 80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
85 90 95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
100 105 110

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

Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala
130 135 140

Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu
145 150 155 160

Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr
165 170 175

Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser
180 185 190

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

Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu
    210                 215                 220

Gly Gly Asp Val Gln Ser Pro Asn Cys Pro Ser Glu Asp Val Val Ile
225                 230                 235                 240

Thr Pro Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly
                245                 250                 255

Asn Val Ser Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu
            260                 265                 270

Asp Cys Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu
        275                 280                 285

Leu Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser
    290                 295                 300

Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro
305                 310                 315                 320

Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met
                325                 330                 335

Ser Ser Phe Tyr Gln Asn Gln Ser Asp Pro Lys Pro Glu Asn Pro Ala
            340                 345                 350

Cys Pro Trp Thr Val Leu Pro Ala Gly Asp Leu Pro Thr His Asp Gly
        355                 360                 365

Tyr Leu Pro Ser Asn Ile Asp Asp Leu Pro Ser His Glu Ala Pro Leu
    370                 375                 380

Ala Asp Ser Leu Glu Glu Leu Glu Pro Gln
385                 390
```

<210> 300
<211> 393
<212> PRT
<213> Artificial Sequence

<220>
<223> FKBP(F36V)- TPOR/MPLR(478-582;N-15)-IL7R(316-459)-IL12Rb2(775-825)

<400> 300

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1 5 10 15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
20 25 30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
35 40 45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
50 55 60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65 70 75 80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
85 90 95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
100 105 110

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

Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu
130 135 140

Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg
145 150 155 160

Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys
165 170 175

```
Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu
            180                 185                 190

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

Asp Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly
    210                 215                 220

Gly Asp Val Gln Ser Pro Asn Cys Pro Ser Glu Asp Val Val Ile Thr
225                 230                 235                 240

Pro Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn
                245                 250                 255

Val Ser Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp
            260                 265                 270

Cys Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu
        275                 280                 285

Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu
    290                 295                 300

Gln Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile
305                 310                 315                 320

Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser
                325                 330                 335

Ser Phe Tyr Gln Asn Gln Ser Asp Pro Lys Pro Glu Asn Pro Ala Cys
            340                 345                 350

Pro Trp Thr Val Leu Pro Ala Gly Asp Leu Pro Thr His Asp Gly Tyr
        355                 360                 365

Leu Pro Ser Asn Ile Asp Asp Leu Pro Ser His Glu Ala Pro Leu Ala
    370                 375                 380

Asp Ser Leu Glu Glu Leu Glu Pro Gln
385                 390
```

<210> 301
<211> 392
<212> PRT
<213> Artificial Sequence

<220>
<223> FKBP(F36V)- TPOR/MPLR(478-582;N-16)-IL7R(316-459)-IL12Rb2(775-825)

<400> 301

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1 5 10 15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
20 25 30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
35 40 45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
50 55 60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65 70 75 80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
85 90 95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
100 105 110

Arg Val Glu Thr Ala Thr Glu Thr Ala Val Leu Gly Leu Leu Leu Leu
115 120 125

Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp
130 135 140

Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp
145 150 155 160

Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys Glu
165 170 175

```
Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg
            180                 185                 190

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

Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly
    210                 215                 220

Asp Val Gln Ser Pro Asn Cys Pro Ser Glu Asp Val Val Ile Thr Pro
225                 230                 235                 240

Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn Val
                245                 250                 255

Ser Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys
            260                 265                 270

Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu
        275                 280                 285

Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln
    290                 295                 300

Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu
305                 310                 315                 320

Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser
                325                 330                 335

Phe Tyr Gln Asn Gln Ser Asp Pro Lys Pro Glu Asn Pro Ala Cys Pro
            340                 345                 350

Trp Thr Val Leu Pro Ala Gly Asp Leu Pro Thr His Asp Gly Tyr Leu
        355                 360                 365

Pro Ser Asn Ile Asp Asp Leu Pro Ser His Glu Ala Pro Leu Ala Asp
    370                 375                 380
```

Ser Leu Glu Glu Leu Glu Pro Gln
385 390

<210> 302
<211> 391
<212> PRT
<213> Artificial Sequence

<220>
<223> FKBP(F36V)- TPOR/MPLR(478-582;N-17)-IL7R(316-459)-IL12Rb2(775-825)

<400> 302

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1 5 10 15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
20 25 30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
35 40 45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
50 55 60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65 70 75 80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
85 90 95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
100 105 110

Arg Val Glu Thr Ala Thr Glu Thr Val Leu Gly Leu Leu Leu Leu Arg
115 120 125

Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp Pro
130 135 140

Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp Thr
145 150 155 160

```
Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys Glu Glu
                165                 170                 175

Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg Thr
            180                 185                 190

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

Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly Asp
    210                 215                 220

Val Gln Ser Pro Asn Cys Pro Ser Glu Asp Val Val Ile Thr Pro Glu
225                 230                 235                 240

Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn Val Ser
                245                 250                 255

Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg
            260                 265                 270

Glu Ser Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu Ser
        275                 280                 285

Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln Ser
    290                 295                 300

Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu Thr
305                 310                 315                 320

Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser Phe
                325                 330                 335

Tyr Gln Asn Gln Ser Asp Pro Lys Pro Glu Asn Pro Ala Cys Pro Trp
            340                 345                 350

Thr Val Leu Pro Ala Gly Asp Leu Pro Thr His Asp Gly Tyr Leu Pro
        355                 360                 365

Ser Asn Ile Asp Asp Leu Pro Ser His Glu Ala Pro Leu Ala Asp Ser
    370                 375                 380
```

Leu Glu Glu Leu Glu Pro Gln
385 390

<210> 303
<211> 390
<212> PRT
<213> Artificial Sequence

<220>
<223> FKBP(F36V)- TPOR/MPLR(478-582;N-18)-IL7R(316-459)-IL12Rb2(775-825)

<400> 303

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1 5 10 15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
20 25 30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
35 40 45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
50 55 60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65 70 75 80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
85 90 95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
100 105 110

Arg Val Glu Thr Ala Thr Glu Thr Leu Gly Leu Leu Leu Leu Arg Trp
115 120 125

Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu Trp Pro Ser
130 135 140

Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg Asp Thr Ala
145 150 155 160

```
Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys Glu Glu Val
                165                 170                 175

Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu Arg Thr Pro
            180                 185                 190

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

Pro Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly Gly Asp Val
    210                 215                 220

Gln Ser Pro Asn Cys Pro Ser Glu Asp Val Val Ile Thr Pro Glu Ser
225                 230                 235                 240

Phe Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn Val Ser Ala
                245                 250                 255

Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg Glu
            260                 265                 270

Ser Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu Ser Leu
        275                 280                 285

Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln Ser Gly
    290                 295                 300

Ile Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu Thr Ser
305                 310                 315                 320

Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr
                325                 330                 335

Gln Asn Gln Ser Asp Pro Lys Pro Glu Asn Pro Ala Cys Pro Trp Thr
            340                 345                 350

Val Leu Pro Ala Gly Asp Leu Pro Thr His Asp Gly Tyr Leu Pro Ser
        355                 360                 365
```

Asn Ile Asp Asp Leu Pro Ser His Glu Ala Pro Leu Ala Asp Ser Leu
370 375 380

Glu Glu Leu Glu Pro Gln
385 390

<210> 304
<211> 409
<212> PRT
<213> Artificial Sequence

<220>
<223> FKBP(F36V)- TPOR/MPLR(478-582;N+1)-IL7R(316-459)-IL12Rb2(775-825)

<400> 304

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1 5 10 15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
20 25 30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
35 40 45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
50 55 60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65 70 75 80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
85 90 95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
100 105 110

Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Leu Ile Ser Leu Val Thr
115 120 125

Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu
130 135 140

```
Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu
145                 150                 155                 160

Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg
                165                 170                 175

Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys
            180                 185                 190

Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu
        195                 200                 205

Arg Thr Pro Leu Pro Leu Ala Arg Asp Glu Val Glu Gly Phe Leu Gln
    210                 215                 220

Asp Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu Gly
225                 230                 235                 240

Gly Asp Val Gln Ser Pro Asn Cys Pro Ser Glu Asp Val Val Ile Thr
                245                 250                 255

Pro Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly Asn
            260                 265                 270

Val Ser Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp
        275                 280                 285

Cys Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu
    290                 295                 300

Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu
305                 310                 315                 320

Gln Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile
                325                 330                 335

Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser
            340                 345                 350

Ser Phe Tyr Gln Asn Gln Ser Asp Pro Lys Pro Glu Asn Pro Ala Cys
        355                 360                 365
```

Pro Trp Thr Val Leu Pro Ala Gly Asp Leu Pro Thr His Asp Gly Tyr
370 375 380

Leu Pro Ser Asn Ile Asp Asp Leu Pro Ser His Glu Ala Pro Leu Ala
385 390 395 400

Asp Ser Leu Glu Glu Leu Glu Pro Gln
405

<210> 305
<211> 410
<212> PRT
<213> Artificial Sequence

<220>
<223> FKBP(F36V)- TPOR/MPLR(478-582;N+2)-IL7R(316-459)-IL12Rb2(775-825)

<400> 305

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1 5 10 15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
20 25 30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
35 40 45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
50 55 60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65 70 75 80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
85 90 95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
100 105 110

Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Val Leu Ile Ser Leu Val
115 120 125

```
Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu
    130                 135                 140

Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala
145                 150                 155                 160

Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu
                165                 170                 175

Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr
            180                 185                 190

Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser
        195                 200                 205

Glu Arg Thr Pro Leu Pro Leu Ala Arg Asp Glu Val Glu Gly Phe Leu
    210                 215                 220

Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg Leu
225                 230                 235                 240

Gly Gly Asp Val Gln Ser Pro Asn Cys Pro Ser Glu Asp Val Val Ile
                245                 250                 255

Thr Pro Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala Gly
            260                 265                 270

Asn Val Ser Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu
        275                 280                 285

Asp Cys Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu
    290                 295                 300

Leu Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser
305                 310                 315                 320

Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro
                325                 330                 335
```

```
Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met
            340                 345                 350

Ser Ser Phe Tyr Gln Asn Gln Ser Asp Pro Lys Pro Glu Asn Pro Ala
        355                 360                 365

Cys Pro Trp Thr Val Leu Pro Ala Gly Asp Leu Pro Thr His Asp Gly
    370                 375                 380

Tyr Leu Pro Ser Asn Ile Asp Asp Leu Pro Ser His Glu Ala Pro Leu
385                 390                 395                 400

Ala Asp Ser Leu Glu Glu Leu Glu Pro Gln
                405                 410
```

<210> 306
<211> 411
<212> PRT
<213> Artificial Sequence

<220>
<223> FKBP(F36V)- TPOR/MPLR(478-582;N+3)-IL7R(316-459)-IL12Rb2(775-825)

<400> 306

```
Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                   10                  15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95
```

```
Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
            100                 105                 110

Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Leu Val Leu Ile Ser Leu
        115                 120                 125

Val Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu
    130                 135                 140

Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His
145                 150                 155                 160

Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr
                165                 170                 175

Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp
            180                 185                 190

Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser
        195                 200                 205

Ser Glu Arg Thr Pro Leu Pro Leu Ala Arg Asp Glu Val Glu Gly Phe
    210                 215                 220

Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys Gln Arg
225                 230                 235                 240

Leu Gly Gly Asp Val Gln Ser Pro Asn Cys Pro Ser Glu Asp Val Val
                245                 250                 255

Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys Leu Ala
            260                 265                 270

Gly Asn Val Ser Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser
        275                 280                 285

Leu Asp Cys Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr Gln Asp
    290                 295                 300

Leu Leu Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe
305                 310                 315                 320
```

Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly Gln
325 330 335

Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr
340 345 350

Met Ser Ser Phe Tyr Gln Asn Gln Ser Asp Pro Lys Pro Glu Asn Pro
355 360 365

Ala Cys Pro Trp Thr Val Leu Pro Ala Gly Asp Leu Pro Thr His Asp
370 375 380

Gly Tyr Leu Pro Ser Asn Ile Asp Asp Leu Pro Ser His Glu Ala Pro
385 390 395 400

Leu Ala Asp Ser Leu Glu Glu Leu Glu Pro Gln
405 410

<210> 307
<211> 412
<212> PRT
<213> Artificial Sequence

<220>
<223> FKBP(F36V)- TPOR/MPLR(478-582;N+4)-IL7R(316-459)-IL12Rb2(775-825)

<400> 307

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1 5 10 15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
20 25 30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
35 40 45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
50 55 60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65 70 75 80

```
Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
            100                 105                 110

Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile Leu Val Leu Ile Ser
        115                 120                 125

Leu Val Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly
    130                 135                 140

Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg
145                 150                 155                 160

His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln
                165                 170                 175

Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser
            180                 185                 190

Asp Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys
        195                 200                 205

Ser Ser Glu Arg Thr Pro Leu Pro Leu Ala Arg Asp Glu Val Glu Gly
    210                 215                 220

Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys Gln
225                 230                 235                 240

Arg Leu Gly Gly Asp Val Gln Ser Pro Asn Cys Pro Ser Glu Asp Val
                245                 250                 255

Val Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys Leu
            260                 265                 270

Ala Gly Asn Val Ser Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg
        275                 280                 285
```

```
Ser Leu Asp Cys Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr Gln
    290                 295                 300

Asp Leu Leu Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro
305                 310                 315                 320

Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln Gly
                325                 330                 335

Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val
            340                 345                 350

Thr Met Ser Ser Phe Tyr Gln Asn Gln Ser Asp Pro Lys Pro Glu Asn
        355                 360                 365

Pro Ala Cys Pro Trp Thr Val Leu Pro Ala Gly Asp Leu Pro Thr His
    370                 375                 380

Asp Gly Tyr Leu Pro Ser Asn Ile Asp Asp Leu Pro Ser His Glu Ala
385                 390                 395                 400

Pro Leu Ala Asp Ser Leu Glu Glu Leu Glu Pro Gln
                405                 410
```

<210> 308
<211> 413
<212> PRT
<213> Artificial Sequence

<220>
<223> FKBP(F36V)- TPOR/MPLR(478-582;N+5)-IL7R(316-459)-IL12Rb2(775-825)

<400> 308

```
Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                   10                  15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45
```

```
Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
            100                 105                 110

Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Leu Ile Leu Val Leu Ile
        115                 120                 125

Ser Leu Val Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu
    130                 135                 140

Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu
145                 150                 155                 160

Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly
                165                 170                 175

Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val
            180                 185                 190

Ser Asp Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro
        195                 200                 205

Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu Ala Arg Asp Glu Val Glu
    210                 215                 220

Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu Lys
225                 230                 235                 240

Gln Arg Leu Gly Gly Asp Val Gln Ser Pro Asn Cys Pro Ser Glu Asp
                245                 250                 255

Val Val Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr Cys
            260                 265                 270
```

```
Leu Ala Gly Asn Val Ser Ala Cys Asp Ala Pro Ile Leu Ser Ser Ser
        275                 280                 285


Arg Ser Leu Asp Cys Arg Glu Ser Gly Lys Asn Gly Pro His Val Tyr
    290                 295                 300


Gln Asp Leu Leu Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro Pro
305                 310                 315                 320


Pro Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro Val Ala Gln
                325                 330                 335


Gly Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala Tyr
            340                 345                 350


Val Thr Met Ser Ser Phe Tyr Gln Asn Gln Ser Asp Pro Lys Pro Glu
        355                 360                 365


Asn Pro Ala Cys Pro Trp Thr Val Leu Pro Ala Gly Asp Leu Pro Thr
    370                 375                 380


His Asp Gly Tyr Leu Pro Ser Asn Ile Asp Asp Leu Pro Ser His Glu
385                 390                 395                 400


Ala Pro Leu Ala Asp Ser Leu Glu Glu Leu Glu Pro Gln
                405                 410


<210>  309
<211>  414
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  FKBP(F36V)- TPOR/MPLR(478-582;N+6)-IL7R(316-459)-IL12Rb2(775-825)

<400>  309

Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                   10                  15


Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30
```

```
Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
            100                 105                 110

Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Leu Leu Ile Leu Val Leu
        115                 120                 125

Ile Ser Leu Val Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala Val
    130                 135                 140

Leu Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg
145                 150                 155                 160

Leu Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu
                165                 170                 175

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

Val Ser Asp Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu
        195                 200                 205

Pro Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu Ala Arg Asp Glu Val
    210                 215                 220

Glu Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu
225                 230                 235                 240
```

```
Lys Gln Arg Leu Gly Gly Asp Val Gln Ser Pro Asn Cys Pro Ser Glu
                245                 250                 255

Asp Val Val Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser Ser Leu Thr
            260                 265                 270

Cys Leu Ala Gly Asn Val Ser Ala Cys Asp Ala Pro Ile Leu Ser Ser
        275                 280                 285

Ser Arg Ser Leu Asp Cys Arg Glu Ser Gly Lys Asn Gly Pro His Val
    290                 295                 300

Tyr Gln Asp Leu Leu Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu Pro
305                 310                 315                 320

Pro Pro Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro Val Ala
                325                 330                 335

Gln Gly Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu Ala
            340                 345                 350

Tyr Val Thr Met Ser Ser Phe Tyr Gln Asn Gln Ser Asp Pro Lys Pro
        355                 360                 365

Glu Asn Pro Ala Cys Pro Trp Thr Val Leu Pro Ala Gly Asp Leu Pro
    370                 375                 380

Thr His Asp Gly Tyr Leu Pro Ser Asn Ile Asp Asp Leu Pro Ser His
385                 390                 395                 400

Glu Ala Pro Leu Ala Asp Ser Leu Glu Glu Leu Glu Pro Gln
                405                 410
```

<210> 310
<211> 415
<212> PRT
<213> Artificial Sequence

<220>
<223> FKBP(F36V)- TPOR/MPLR(478-582;N+7)-IL7R(316-459)-IL12Rb2(775-825)

<400> 310

```
Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                  10                  15

Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30

Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45

Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60

Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80

Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95

Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
            100                 105                 110

Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Val Leu Leu Ile Leu Val
        115                 120                 125

Leu Ile Ser Leu Val Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala
    130                 135                 140

Val Leu Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg
145                 150                 155                 160

Arg Leu Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val
                165                 170                 175

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

Thr Val Ser Asp Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile
        195                 200                 205

Leu Pro Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu Ala Arg Asp Glu
    210                 215                 220
```

```
Val Glu Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu Ser
225                 230                 235                 240

Glu Lys Gln Arg Leu Gly Gly Asp Val Gln Ser Pro Asn Cys Pro Ser
                245                 250                 255

Glu Asp Val Val Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser Ser Leu
            260                 265                 270

Thr Cys Leu Ala Gly Asn Val Ser Ala Cys Asp Ala Pro Ile Leu Ser
        275                 280                 285

Ser Ser Arg Ser Leu Asp Cys Arg Glu Ser Gly Lys Asn Gly Pro His
    290                 295                 300

Val Tyr Gln Asp Leu Leu Leu Ser Leu Gly Thr Thr Asn Ser Thr Leu
305                 310                 315                 320

Pro Pro Pro Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro Val
                325                 330                 335

Ala Gln Gly Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu Glu
            340                 345                 350

Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln Asn Gln Ser Asp Pro Lys
        355                 360                 365

Pro Glu Asn Pro Ala Cys Pro Trp Thr Val Leu Pro Ala Gly Asp Leu
    370                 375                 380

Pro Thr His Asp Gly Tyr Leu Pro Ser Asn Ile Asp Asp Leu Pro Ser
385                 390                 395                 400

His Glu Ala Pro Leu Ala Asp Ser Leu Glu Glu Leu Glu Pro Gln
                405                 410                 415
```

<210> 311
<211> 416
<212> PRT
<213> Artificial Sequence

<220>
<223> FKBP(F36V)- TPOR/MPLR(478-582;N+7)-IL7R(316-459)-IL12Rb2(775-825)

<400> 311

```
Met Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe
1               5                  10                  15


Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
            20                  25                  30


Asp Gly Lys Lys Val Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
        35                  40                  45


Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
    50                  55                  60


Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
65                  70                  75                  80


Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
                85                  90                  95


Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Ser Asp Pro Thr
            100                 105                 110


Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Leu Val Leu Leu Ile Leu
        115                 120                 125


Val Leu Ile Ser Leu Val Thr Ala Leu His Leu Val Leu Gly Leu Ser
    130                 135                 140


Ala Val Leu Gly Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr
145                 150                 155                 160


Arg Arg Leu Arg His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg
                165                 170                 175


Val Leu Gly Gln Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys
            180                 185                 190
```

```
Ala Thr Val Ser Asp Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu
        195                 200                 205

Ile Leu Pro Lys Ser Ser Glu Arg Thr Pro Leu Pro Leu Ala Arg Asp
    210                 215                 220

Glu Val Glu Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu
225                 230                 235                 240

Ser Glu Lys Gln Arg Leu Gly Gly Asp Val Gln Ser Pro Asn Cys Pro
                245                 250                 255

Ser Glu Asp Val Val Ile Thr Pro Glu Ser Phe Gly Arg Asp Ser Ser
            260                 265                 270

Leu Thr Cys Leu Ala Gly Asn Val Ser Ala Cys Asp Ala Pro Ile Leu
        275                 280                 285

Ser Ser Ser Arg Ser Leu Asp Cys Arg Glu Ser Gly Lys Asn Gly Pro
    290                 295                 300

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

Leu Pro Pro Pro Phe Ser Leu Gln Ser Gly Ile Leu Thr Leu Asn Pro
                325                 330                 335

Val Ala Gln Gly Gln Pro Ile Leu Thr Ser Leu Gly Ser Asn Gln Glu
            340                 345                 350

Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr Gln Asn Gln Ser Asp Pro
        355                 360                 365

Lys Pro Glu Asn Pro Ala Cys Pro Trp Thr Val Leu Pro Ala Gly Asp
    370                 375                 380

Leu Pro Thr His Asp Gly Tyr Leu Pro Ser Asn Ile Asp Asp Leu Pro
385                 390                 395                 400

Ser His Glu Ala Pro Leu Ala Asp Ser Leu Glu Glu Leu Glu Pro Gln
                405                 410                 415
```